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Multiple Laboratory Evaluation of the Reiter Protein Complement Fixation Method

JAMES N. MILLER, *Ph.D.*, CHARLES M. CARPENTER, *M.D.*, RUTH A. BOAK, *M.D.*, E. TAYLOR PETERSON, *B.A.*, CHARLES F. PAIT, *M.D.*, CARL A. LAWRENCE, *Ph.D.*, GERALD A. HEIDBREDER, *M.D.*, WILLIAM D. LINSCOTT, *B.S.*, and FRANK P. FAZZAN, *M.S.*, Los Angeles

• **Duplicate Reiter protein complement fixation tests were carried out on different days at the UCLA laboratory on 636 specimens entailing diagnostic problems. Results were in agreement in 94.2 per cent of cases.**

A comparison of the results obtained with the first RPCF test carried out on 639 diagnostic problem specimens submitted to four Los Angeles laboratories showed disagreement ranging from 10 to 13 per cent.

Agreement between RPCF and TPI results in each of the four laboratories ranged from 81.2 to 82.7 per cent.

A greater correlation was obtained between RPCF and TPI results than between TPI and STS or RPCF and STS.

In the presence of nonreactive RPCF tests, from 5.6 to 7.1 per cent of the specimens tested in each laboratory were reactive to VDRL and TPI tests. Nonreactive VDRL and reactive TPI results ranged from 7.2 to 8.3 per cent of the specimens tested.

In the presence of reactive TPI and RPCF results, 5.5 to 6.4 per cent of the specimens tested in each laboratory showed nonreactive VDRL tests.

Twenty-nine or 4.6 per cent of 625 specimens tested showed nonreactive VDRL, reactive cardiolipin Kolmer and reactive TPI tests.

Of the weakly reactive RPCF, VDRL or cardiolipin Kolmer tests, a higher percentage of the RPCF results gave reactive TPI tests than did either the VDRL or cardiolipin Kolmer procedures.

The number of specimens showing discrepant RPCF results upon being retested in the four laboratories ranged from 33 to 68. Reactive TPI tests on those specimens ranged from 30.3 per cent to 54.4 per cent.

SEARCH FOR A SIMPLE, economic serologic procedure for use in routine public health laboratories to distinguish biologic false positive (BFP) reactions from those due to infection with *Treponema pallidum* has led to the development of the Reiter Protein Complement Fixation (RPCF) test.[3,4] Inasmuch as the *Treponema pallidum* Immobilization (TPI) test, developed by Nelson and Mayer,[8] has been generally accepted as the most dependable test for the diagnosis of syphilis, it was employed as a basis for comparison in the evaluation of the RPCF test.

Preliminary studies have indicated that the RPCF test has sensitivity and specificity comparable with the more expensive and complex TPI procedure,[2,7,10]

From the Department of Infectious Diseases, School of Medicine, University of California, Los Angeles; the Los Angeles City and Los Angeles County Health Departments; and the Laboratory Service, Serology Section, Veterans Administration Center, Los Angeles 24.

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thereby suggesting its usefulness as an adjunct to the battery of serologic tests for syphilis (STS). Inasmuch as these studies were carried out in specialized research laboratories on specimens of blood from persons with well-documented cases of syphilis, the value of the RPCF test in a routine clinical or public health laboratory was as yet not established. Further, the number of weakly reactive RPCF results obtained during the initial studies, together with the problem in anticomplementary reactions encountered, indicated the necessity for a practical evaluation of the test. Therefore, studies were undertaken to determine the value and practicability of the RPCF test in laboratories where complement fixation procedures are routinely employed.

METHODS AND MATERIALS

Six hundred and thirty-nine specimens of blood submitted to the University of California, Los Angeles, T.P.I. laboratory were subjected to the RPCF test in four laboratories. The specimens were obtained from patients in one of the following categories:

1. Patients with either no history or suggestive† history of syphilis but with a reactive STS obtained on previous samples. Such patients were categorized in the three following groups:

(a) Those with essentially negative physical findings.

(b) Those with diseases or conditions other than syphilis.

(c) Those with signs and symptoms suggestive of syphilis.

2. Patients with no history or suggestive history of syphilis, with nonreactive STS obtained on previous samples, but with signs and symptoms characteristic of syphilitic infection.

The specimens were coded, divided into aliquots, and distributed to the laboratories of the Los Angeles City Health Department and the Los Angeles County Health Department and to the Sawtelle Veterans Administration Hospital. An aliquot was retained at the UCLA Laboratory. Each participating laboratory carried out the RPCF test on all specimens, utilizing the one-fifth volume Kolmer method recommended by Portnoy and Magnuson[9] for the *Treponema pallidum* Complement Fixation (TPCF) test.‡ The test was interpreted as follows:

3+ and 4+ = Reactive
± to 2+ = Weakly reactive
Negative = Nonreactive

A specimen of serum of predetermined reactivity was distributed to each laboratory for use as a quantitative control.

In an effort to determine the possible occurrence of technical error, each laboratory repeated the test twice on separate days if the initial result obtained on a specimen differed from that of the other laboratories. When the results in two laboratories differed from those obtained in the other two laboratories, the test was repeated twice on separate days by all participants. The test was repeated on all specimens by the UCLA laboratory to determine reproducibility; the limited supply of antigen prevented such studies from being carried out completely by the other participants.

The TPI test was performed on each specimen by the UCLA laboratory according to the method of Nelson and Mayer,[8] with modifications as described by Magnuson and Thompson,[5] Thompson and Magnuson[11] and Boak and Miller.[1]

The Venereal Disease Research Laboratory (VDRL) slide flocculation and cardiolipin Kolmer procedures were carried out on each specimen by the Los Angeles City Health Department laboratory according to the methods described in the Manual for Serologic Tests for Syphilis.[6]

TABLE 1.—*Reproducibility of RPCF Test in Laboratory "A"*

Result of Initial Test	Total Specimens	Result of Second Test: Agreement	Result of Second Test: Disagreement	Per Cent Agreement
Reactive or weakly reactive	237	219	18	92.4
Nonreactive	399	380	19	95.2
Total	636	599	37	94.2

TABLE 2.—*Correlation of Results of 639 RPCF Tests Completed in Each of Four Laboratories*

Laboratory	Total Specimens	Disagreement: In 3 Labs	Disagreement: In 2 Labs	Disagreement: Total	Correlation*: Per Cent Disagreement	Correlation*: Per Cent Agreement
A	639	20	44	64	10.0	90.0
B	639	24	44	68	10.6	89.4
C	639	33	44	77	12.1	87.9
D	639	39	44	83	13.0	87.0

*Represents correlation with at least two of the other participating laboratories.

EXPERIMENTAL RESULTS

Reproducibility of RPCF Test

Six hundred and thirty-six of the 639 specimens were tested by the RPCF procedure twice, each on a different day, at the UCLA laboratory. Two hundred and nineteen or 92.4 per cent of the 237 specimens showing reactive or weakly reactive results and 380 or 95.2 per cent of the 399 speci-

†Based on clinical and associated STS impressions.

‡The same lot of RPCF antigen for use in this study was supplied to all laboratories by Organon, Inc., Orange, New Jersey.

mens showing nonreactive results were in agreement. Thus, the results of 599 or 94.2 per cent of the 636 specimens tested on different days showed agreement (Table 1). Comparison of the initial results obtained in the four laboratories showed disagreements ranging from 10 per cent to 13 per cent of the 639 specimens tested. Thus, from 87.0 per cent to 90.0 per cent of the results obtained in any individual laboratory were in agreement with those obtained in at least two of the three remaining laboratories (Table 2). Those specimens which showed conflicting results upon being retested on different days are not included in the subsequent analysis of the data from each laboratory, but are presented separately. In addition, 12 specimens on which TPI tests were inconclusive or doubtful, one specimen with anticomplementary reactivity upon quantitative testing with RPCF antigen, and two specimens not tested by one of the procedures due to an insufficient amount were excluded from subsequent consideration.

Comparison of TPI and RPCF Results

Agreement between TPI and RPCF results in each laboratory ranged from 81.2 per cent to 82.7 per cent (Table 3). Inasmuch as a reactive TPI test has been generally accepted as indisputable evidence of treponemal infection, those specimens exhibiting reactive TPI and nonreactive RPCF tests were considered to be from patients with syphilis, despite the fact that unequivocal data for the presence of the disease were lacking. Similarly, for those patients with blood that was nonreactive to TPI and reactive to RPCF tests the history did not conclusively show the presence or absence of infection with *T. pallidum* and, as a result, no conclusions based on these data can be drawn relative to the sensitivity and specificity of the tests.

TABLE 3.—*Results of TPI and RPCF Tests in Four Laboratories

Laboratory	Total Specimens	TPI— RPCF—	TPI+ RPCF+	TPI— RPCF+	TPI+ RPCF—	Agreement Number	Agreement Per Cent
A	588	314	171	50	53	485	82.5
B	592	301	186	61	44	487	82.3
C	581	302	170	61	48	472	81.2
D	560	308	155	46	51	463	82.7

* +Represents reactive or weakly reactive results.
—Represents nonreactive results.

Comparison of Results of TPI, RPCF and STS

The results comparing the two treponemal tests as well as the treponemal and nontreponemal tests are presented in Table 4. The better correlation of results of the TPI and RPCF tests, compared with the agreement between TPI and STS or between RPCF results, is a reflection of the large number of biologic false-positive reactions obtained with the standard procedures. This is well demonstrated by the data presented in Tables 5 and 6, in which 25.2 to 27.7 per cent of the specimens tested in each laboratory exhibited biologic false-positive VDRL or cardiolipin Kolmer reactions. Inasmuch as the VDRL procedure is used by many laboratories as the only screening test, it is of interest to note that from 7.2 per cent to 8.3 per cent of the total specimens tested in each laboratory exhibited nonreactive VDRL and reactive TPI tests. From 3.4 per cent to 5.0 per cent showed reactive RPCF results in the presence of nonreactive VDRL and TPI tests. Further, from 5.6 to 7.1 per cent of the samples showed reactive VDRL and TPI, and nonreactive RPCF tests (Table 5). The fact that from 2.9 to 3.4 per cent of the specimens showed nonreaction to cardiolipin Kolmer tests and from 5.5 to 6.4 per cent showed nonreaction to VDRL tests in the presence of reactive TPI and RPCF results serves to emphasize that maximum detection of present or past syphilitic infection may be obtained only when both VDRL and cardiolipin Kolmer techniques are employed as screening procedures

TABLE 4.—*Agreement Between TPI, RPCF and Standard Serologic Tests for Syphilis*

TESTS	AGREEMENT Lab A Number Total	Lab A Per Cent	Lab B Number Total	Lab B Per Cent	Lab C Number Total	Lab C Per Cent	Lab D Number Total	Lab D Per Cent
TPI vs. RPCF	485/588	82.5	487/592	82.3	472/581	81.2	463/560	82.7
TPI vs. VDRL	362/588	61.6	363/592	61.3	356/581	61.3	340/560	60.7
TPI vs. Cardiolipin Kolmer	362/588	61.6	368/592	62.1	356/581	61.3	344/560	61.4
RPCF vs. VDRL	341/588	58.0	342/592	57.8	327/581	56.3	319/560	57.0
RPCF vs. Cardiolipin Kolmer	357/588	60.7	373/592	63.0	353/581	60.8	337/560	60.2

TABLE 5.—*Results of TPI, RPCF and VDRL Tests*

TESTS*			Lab A		Lab B		Lab C		Lab D	
TPI	RPCF	VDRL	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
—	—	—	162	27.6	152	25.7	152	26.2	157	28.0
+	+	+	138	23.5	148	25.0	135	23.2	124	22.2
—	—	+	152	25.8	149	25.2	150	25.8	151	27.0
+	+	—	33	5.6	38	6.4	35	6.0	31	5.5
+	—	—	12	2.0	11	1.9	7	1.2	11	2.0
+	—	+	41	7.0	33	5.6	41	7.1	40	7.1
—	+	—	21	3.6	30	5.0	28	4.8	19	3.4
—	+	+	29	4.9	31	5.2	33	5.7	27	4.8
Total			588	100.0	592	100.0	581	100.0	560	100.0

* +Represents reactive or weakly reactive results.
—Represents nonreactive results.

TABLE 6.—*Results of TPI, RPCF and Cardiolipin Kolmer Tests*

TESTS*			Lab A		Lab B		Lab C		Lab D	
TPI	RPCF	Cardiolipin Kolmer	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
—	—	—	154	26.2	152	25.7	150	25.8	153	27.3
+	+	+	154	26.2	166	28.0	150	25.8	139	24.8
—	—	+	160	27.2	149	25.2	152	26.2	155	27.7
+	+	—	17	2.9	20	3.4	20	3.4	16	2.9
+	—	—	13	2.2	11	1.9	8	1.4	13	2.3
+	—	+	40	6.8	33	5.6	40	6.9	38	6.8
—	+	—	14	2.4	17	2.8	16	2.8	14	2.5
—	+	+	36	6.1	44	7.4	45	7.7	32	5.7
Total			588	100.0	592	100.0	581	100.0	560	100.0

* +Represents reactive or weakly reactive results.
—Represents nonreactive results.

(Tables 5 and 6). This is further exemplified by the fact that 29 or 4.6 per cent of 625 specimens tested were nonreactive to VDRL tests in the presence of reactive cardiolipin Kolmer and TPI results (Table 7). The necessity for utilizing a treponemal antigen for specimens that react to one or both of the standard tests is readily apparent from the data presented in Table 7.

TABLE 7.—*Results of VDRL, Cardiolipin Kolmer and TPI Tests*

TESTS*				
VDRL	Cardiolipin Kolmer	TPI	Number of Samples	Per Cent
—	—	—	118	18.9
+	+	+	178	28.5
+	+	—	136	21.8
—	—	+	19	3.0
—	+	—	75	12.0
+	—	—	58	9.3
—	+	+	29	4.6
+	—	+	12	1.9
Total			625	100.0

* +Represents reactive or weakly reactive results.
—Represents nonreactive results.

Comparison of Results Obtained with Sera Yielding Weakly Reactive RPCF and Weakly Reactive STS

Initial studies on well-documented serum specimens showed that weakly reactive RPCF results reflected a relatively lower sensitivity for the RPCF test when compared with the TPI test without affecting the specificity of the former procedure.[7] Attempts to determine whether use of the RPCF test was a practical adjunct to the STS employed in routine laboratories necessitated a comparison between the weakly reactive RPCF and weakly reactive STS obtained on the specimens that posed a diagnostic problem. In Table 8, the data show that, of the weakly reactive RPCF, VDRL or cardiolipin Kolmer tests, a higher proportion of the RPCF results gave reactive TPI tests than did either the VDRL or cardiolipin Kolmer procedures, thus indicating the relatively higher sensitivity of the RPCF test. With the exception of Laboratory "B," fewer weakly reactive results were obtained with the RPCF than with the VDRL or with the cardiolipin Kolmer tests. The number of weakly reactive cardiolipin Kolmer results in Laboratory "B," however, exceeded those obtained with either the VDRL or the RPCF procedures.

Anticomplementary RPCF Reactions

Anticomplementary reactions obtained in complement fixation tests necessitated a determination of the frequency of such reactions in the RPCF test. Twelve or 1.9 per cent of the 639 specimens tested in two laboratories and 18 or 2.8 per cent of the same number of specimens tested in the remaining two laboratories showed anticomplementary reactions. In an attempt to obtain a valid result, the

TABLE 8.—*Sensitivity of Weakly Reactive RPCF, VDRL and Cardiolipin Kolmer Tests Utilizing TPI Tests as a Basis for Evaluation*

Laboratory	Test	Total Weakly Reactive Tests	Weakly Reactive Test		Per Cent Weakly Reactive Test and Reactive TPI
			TPI Reactive	TPI Nonreactive	
A	RPCF	44	34	10	77.3
	VDRL	78	28	50	35.9
	Cardiolipin Kolmer	110	39	71	35.5
B	RPCF	107	69	38	64.5
	VDRL	84	31	53	36.9
	Cardiolipin Kolmer	114	41	73	36.0
C	RPCF	64	37	27	57.8
	VDRL	79	28	51	35.4
	Cardiolipin Kolmer	113	39	74	34.5
D	RPCF	59	43	16	72.9
	VDRL	72	24	48	33.3
	Cardiolipin Kolmer	102	34	68	33.3

test was repeated quantitatively on each specimen with a control for each serum dilution. With one exception, the results correlated with those of the TPI test. The discrepancy occurred in only one laboratory on a single specimen which on retesting twice on different days gave results which agreed with those of the TPI test, suggesting an initial technical error.

Analysis of Sera Showing Discrepant RPCF Results

The number of specimens showing discrepant RPCF results upon being retested twice in the four laboratories ranged from 33 to 68. The results from a single laboratory were considered to be in disagreement if two of the three RPCF tests were nonreactive and weakly reactive or nonreactive and reactive. Reactive and/or weakly reactive results in three separate tests were considered to be in agreement. From 30.3 to 54.4 per cent of the specimens with discrepant RPCF results were reactive to TPI tests. Although the presence of minimal RPCF antibody may be responsible for the lack of agreement, the possibility of technical error cannot be excluded.

Inasmuch as the patients whose blood showed discrepant RPCF and nonreactive TPI tests gave either no history or only a suggestive history of syphilis, interpretation of the relative sensitivity and specificity of the two procedures on the basis of these results cannot be made with any degree of accuracy.

DISCUSSION

The results obtained indicate that, although the RPCF test may be used as an adjunct to the STS routinely employed in clinical and public health laboratories, its limitations must be recognized. Although the test shows a relatively high degree of reproducibility on repeated testing of the same specimens, as determined by one of the four participating laboratories, a considerable number of the specimens that were retested by all laboratories showed discrepant RPCF results. Whether such findings are due to technical error, to the presence of minimal antibody or to errors inherent in the mechanics of the test cannot be determined from the data presented. Thus, it is recommended that the RPCF test be repeated at least once on another day to insure optimal accuracy. If the results are discrepant on subsequent testing, a second specimen of serum should be obtained.

Although the agreement between the TPI and RPCF results is considered satisfactory, the fact that reactive TPI and nonreactive RPCF tests occur on the same specimen must be considered in the interpretation of RPCF results. Such findings tend to support the concept that the RPCF test cannot replace the TPI test but may serve as an additional aid with which to obtain an accurate diagnosis. Conversely, the nonreactive TPI and reactive or weakly reactive RPCF tests obtained on the specimens from patients with no history of syphilis cannot be accurately evaluated. However, the occurrence of nonreaction to TPI tests and reactive or weakly reactive results of RPCF tests on specimens from patients with well-documented treated early syphilis[7] as well as the occurrence of such results in some patients with a history suggestive of syphilis, tends to support the specificity of the procedure. The relatively large number of nonreactive RPCF and TPI tests obtained in the presence of reactive or weakly reactive STS also serves to emphasize the greater specificity of the RPCF test as compared with the VDRL and cardiolipin Kolmer techniques. The results, however, confirm the usefulness of the STS chiefly as that of a screening procedure. The occurrence of nonreactive RPCF tests in the presence of reactive VDRL, cardiolipin Kolmer and TPI results extends the value of these three procedures in the diagnosis of syphilis and precludes the possibility of replacing them with the RPCF test. Further, on the basis of the results obtained, both VDRL and cardiolipin Kolmer tests should be preliminarily employed as screening pro-

cedures for the maximum detection of syphilitic infection and the RPCF and TPI methods carried out only on specimens showing reactive or weakly reactive results with one or both procedures. Because of the necessity for testing large numbers of specimens, many laboratories use only the VDRL or comparable flocculation procedures for screening, subsequently employing the cardiolipin Kolmer test on specimens showing reactive or weakly reactive results with the flocculation procedure. Use of the cardiolipin Kolmer test in this manner provides no additional information to the physician, who must have the TPI test performed regardless of the results obtained. The impractical, ineffective use of the cardiolipin Kolmer test in laboratories where large numbers of specimens are to be tested routinely, especially in the light of improved specificity and comparable sensitivity obtained with the RPCF test as shown in this study, speaks for the substitution of the RPCF test for the cardiolipin Kolmer procedure. The latter test is of value, however, in the testing of spinal fluid in suspected cases of neurosyphilis.

Ideally, both RPCF and VDRL tests should be carried out on all specimens to insure maximum detection of present or past infection with *T. pallidum* inasmuch as specimens from patients with treated latent syphilis may be nonreactive to VDRL tests. However, the impracticability of performing the RPCF test on all specimens submitted to public health laboratories precludes doing so.

The occurrence of nonreaction to RPCF tests in the presence of syphilitic infection requires that the TPI procedure be employed as a final test in such circumstances. In areas or countries where facilities are not available for the TPI test, however, the RPCF test may be used with considerable reliability if its limitations are recognized in the serologic diagnosis of syphilis.

The number of anticomplementary reactions obtained with the RPCF test in this study is considered negligible and does not interfere with the practical use of the test. In addition, good correlation was obtained between the results of quantitative RPCF tests on such specimens and those obtained with the TPI test.

Department of Infectious Diseases, University of California School of Medicine, Los Angeles 24 (Carpenter).

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Systemic Use of Corticosteroids in Dermatology

ROBERT G. WALTON, *M.D.*, Modesto, and
EUGENE M. FARBER, *M.D.*, Palo Alto

• **The use of corticosteroids systemically in dermatology has benefited patients with pemphigus and systemic lupus erythematosus in that they now have a better chance to carry on a productive life. These hormones, used cautiously, can alleviate some of the tremendous suffering during the explosive exacerbations and acute crises of atopic and neurodermatitis. Corticosteroids are useful in the widespread and acute contact dermatitis and drug eruptions; they are contraindicated in the treatment of ordinary psoriasis.**

Every attempt should be made by history-taking, clinical examination and necessary laboratory studies to reach an accurate diagnosis before corticosteroids are used. If use of them is indicated, then total patient care is required to avoid complications, and a very careful follow-up is mandatory.

THE SYSTEMIC USE of the corticosteroids has been of great significance in the treatment of patients with skin disease. In 1951,[1] we published in this journal a clinical evaluation of the corticosteroids in selected kinds of dermatosis. The present report comprises our current impressions after ten years of additional experience.

Since the corticosteroids have become readily available they have been used frequently for their palliative effect. This has lessened the incentive for etiologic approaches in the care of a patient with dermatosis. Consequently, often skin diseases that otherwise would be simple and uncomplicated have progressed without recognition during a period of steroid therapy. The morphologic features of a skin disease are altered during the use of corticosteroids, and the course of the disease is usually unaffected, thereby making diagnosis more difficult. The temporary satisfaction of symptomatic relief may not be worth the extended treatment that may be necessary after cessation of corticosteroid therapy. Indications for the use of corticosteroids in dermatology may be divided into four categories:

1. They may be used as a life-saving agent for long and sometimes indefinite periods in usually fatal skin diseases. This includes pemphigus in which the "massive" dose concept of 400 to 1,000 mg. of cortisone by mouth daily (or equivalent dosage of other corticosteroids) is used until remission occurs. The cortisone dosage is then gradually reduced until a therapeutic maintenance dose is achieved. Also included in this category are the severe forms of bullous erythema multiforme, certain phases of exfoliative dermatitis, and systemic lupus erythematosus. The corticosteroids ameliorate the acute crises in systemic lupus erythematosus and although the "massive" dose treatment has to be used on occasion, often the disease can be kept under control with comparatively small doses. In dermatomyositis and scleroderma, corticosteroids bring about some symptomatic improvement, but otherwise are of limited value.

2. The corticosteroids can be used very effectively for short periods in self-limiting disabling diseases such as contact allergic dermatitis (for example, poison oak), in acute urticaria, and in overwhelming sensitivity reaction to drugs.

3. Their use in various kinds of chronic benign dermatosis is subject to considerable controversy. This group includes psoriasis, lichen planus, seborrheic dermatitis and a variety of eczemas such as atopic dermatitis, neurodermatitis and nummular eczema. Giving corticosteroids for psoriasis of the common type should be condemned. Recently we have seen patients with psoriasis that was confined to the elbows and knees but became generalized following the use of corticosteroids. Corticosteroids may be used cautiously in exfoliative psoriasis that might otherwise cause invalidism, and in the explosive guttate psoriasis, but its use even here is fraught with hazards. In the chronic eczemas such as atopic and neurodermatitis, corticosteroids are best used systemically in acute exacerbations; and only in exceptional cases should they be used for long periods, owing to the hazards involved. It must be borne in mind that the drug is palliative, not curative. Certainly other recognized methods of therapy should be tried first and if corticosteroids are used they should always be accompanied by other accepted methods of systemic and local treatment.

4. There is a group of skin diseases in which corticosteroids are definitely contraindicated, either because they are ineffective or are provocative of additional problems. This group consists of the

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From the Department of Dermatology, Stanford University School of Medicine, Palo Alto.

malignant lesions and other tumors of the skin—with the possible exception of the pruritus sometimes associated with lymphomas, certain metabolic disorders such as the xanthomas, and bacterial, viral, or mycotic infections.

No statistical analysis of the complications from corticosteroids was found in a review of the literature. However, there were many reminders that side effects and serious reactions occur during their use. Much has been written regarding the detrimental effect of corticosteroids, but since the introduction of the newer analogues of cortisone, some of the previously described deleterious side reactions are less common.

It is important that there should be a definite viewpoint for the systemic use of corticosteroids in dermatology. Accurate diagnosis before therapy is initiated is imperative. Otherwise, empirical use of the corticosteroids may lead to tragic error. We have in our files records of seven patients with scabies who were treated from four to eight weeks with systemically administered corticosteroids on a presumptive diagnosis of eczema. There are many patients with contact allergic dermatitis who have been treated for several months with systemic corticosteroids without proper search for the causal agent, either by adequate history or patch testing. Three such instances deserve mention. One patient had dermatitis of the forehead due to allergic reaction to a rubber shower cap; another had eczematous dermatitis of the hands due to reaction to cement, and a third was an infant with generalized contact dermatitis due to sensitivity to a locally applied drug. There is a record also of a person with tinea corporis of many months' duration who was treated with systemic corticosteroids.

Because of the great symptomatic relief that corticosteroids provide, a physician may be lulled into a false sense of security or into diagnostic laziness. At one large clinical laboratory it was observed that since corticosteroids became available the search for parasites in the stools of patients with pruritus ani is now rarely requested, so helpful is the local application of steroid cream. Since the introduction of the corticosteroids there is a greater need than ever before for a careful history, complete examination and laboratory studies, including patch testing. Once the use of corticosteroids has been started, the morphologic and symptomatologic features of the eruption are altered, thus making the diagnosis far more difficult.

Basically the indication for using corticosteroids turns upon answering the question: "Can I find the cause?" If the cause can be found, then corticosteroid use can be carefully qualified. If the cause cannot be found, then one should look for a pharmacologically safer means of treating the patient. If such a means cannot be found or fails after a reasonable trial, then corticosteroids may be indicated for relief of crises. The use of corticosteroids systemically in the presence of viral infection is questionable. There are some observers who believe that herpes simplex, herpes zoster and varicella[3,5] may become disseminated widely over the body because of the use of these hormones during the course of infection. Indeed there have been instances of generalized herpes zoster and generalized herpes simplex occurring during corticosteroid therapy. Goldman[2] said that neither herpes zoster nor varicella has been observed as a complication of corticosteroid therapy in children. However, Olansky, Smith and Hansen-Pruss[4] reported a case of fatal vaccinia associated with cortisone therapy in a patient who also had chronic lymphocytic leukemia and agammaglobulinemia.

1700 McHenry Village Way, Modesto (Walton).

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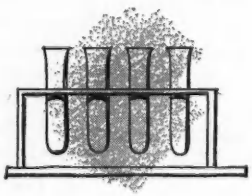

Graded Abrasion—A Treatment for Acne

ROSE B. SAPERSTEIN, *M.D.*, Los Angeles

• **Long term continuous superficial abrasion with abrasive compounds of various degrees of roughness was used over an 11-year period in over 1,500 patients with acne of all types. The following observations were made:**

• **That when a material with a specific abrasive quality is used for a period, desquamation stops despite continued use of the material, and then use of material of the next higher degree of roughness is indicated until the patient's skin is blackhead-free and minutely flaky.**

• **When long term continuous superficial graded abrasion is used alone or with other treatment, it permits the young patients to outgrow the disease with little or no scarring.**

• **The routine of abrasive washing seems in a large measure to replace the constant fingering of lesions by the patient.**

• **No untoward effects were observed clinically. There was no hyperpigmentation of Negro or Caucasian skins.**

ACNE IS A DISEASE of the skin that begins in the pubertal years, may continue into adult life and is characterized by a series of pathophysiologic phenomena, beginning with a pilosebaceous imbalance in which more sebum is secreted than is excreted, causing plugging of the duct opening and the subsequent dermatopathologic course of events[11]: Comedones, papules, pustules and cysts.

Over-secretion of sebum may be brought about by one or more of the following:

Hormonal stimulation.[14]

Irritation by certain foods or drugs—fish or halogen compounds,[1,6] for example.

Congenitally large pilosebaceous duct openings.

Secondary infection by bacteria.

Emotional stresses of adolescence which increase the activity of the oil glands.

Complicating every type of acne are the numerous secondarily infected lesions produced by the young patients, and sometimes by their parents, in attempting to empty the contents of the lesions. These manipulations, often compulsive in character, frequently lead to unnecessary scarring and pitting.

Treatment

The aim of every physician who treats acne should be to produce a cosmetically acceptable result during the formative years, as well as a scar-free skin when the disease is outgrown or remitted. Ever since dermatologists became interested in the treatment of acne, their aims have been the same: To remove the plugged comedo, which removes much of the potential pathology and ultimate scarring. Although they have employed many means, there has been only one fundamental thought—to get rid of the blackhead.

The present-day treatment of acne generally includes x-radiation, antibiotics by mouth, toxoids and vaccines, local keratolytic agents, hormones and expression of fluctuant lesions.

Since the advent of the use of x-ray,[10] there has been little written concerning local regimens except for the sporadic papers on the use of various antibiotics locally as they become available.[2,3]

Dermabrasion,[8,9] has recently found its place in the treatment of acne sequelae. The present report deals with the development and description of a treatment technique which utilizes long term continuous superficial abrasion during the active phases of acne and seems in a large measure to minimize and prevent the sequelae.

Submitted June 30, 1960.

Development of the Concept of Superficial Abrasion

It is common knowledge that most patients with acne appear improved during the summer months following exposure to more intense sunlight, and that relapses occur with the disappearance of the suntan. It can then be supposed that during the exposure to sunlight, desquamation (minute or obvious) takes place, unplugging the pilosebaceous openings; and that when this desquamation stops, the plugs are re-formed and the acne continues.

Efforts to treat patients with mercury vapor quartz lamp radiation are not noticeably successful; nor has the response to the periodic use of peeling pastes been uniformly satisfactory. Many discussions in recent literature deal with the importance of keeping the skin dry and minutely desquamated, implying the use of increasing amounts of keratolytic agents in local medicaments.[15] Recently the use of various synthetic detergents, with and without added keratoplastic and keratolytic agents, has been widely prescribed. While helpful in some cases, these agents are often extremely drying and fail to accomplish the mild, continuous and prolonged desquamation

that results from sunlight and that seems essential for sustained improvement.

A search was instituted for a single treatment regimen which would induce sustained, continuous desquamation, thereby reducing the number of comedones, papules, pustules and cysts. The use of topically applied abrasives and keratolytic drugs is not new,[15] but little has been written about the long continued use of these agents because the very properties which make them therapeutic also make them irritating.

This presentation outlines an explicit treatment regimen, utilizing graded abrasion as the central therapeutic principle[12,13] in the general treatment of acne.

Many of the patients in the present study complained of intense scaling and redness of the skin after use of the then available abrasive agents that were prescribed at first. However, when the desquamation subsided, the number of comedones was fewer, and the skin appeared smoother. It then seemed wise to reduce the number and/or size of the abrasive particles and to incorporate them in a cleansing base. With this change, both the therapeutic value and the cosmetic acceptability were enhanced.

The original abrasive was chosen arbitrarily and progressively diluted with British Soap Base N. F., until it was possible for patients to use it for long periods without extreme irritation. Through the years, by trial and error, it was learned that polygonal particles harder* than 7 (by Moh's Index)[7] were most desirable and that the abrasion was enhanced when particles of many sizes were used simultaneously. Various abrasive particles were tried, but fused synthetic aluminum oxide,†[5] exhibiting no piezoelectric current[4] was found effective and without granuloma producing properties.

Attempts to potentiate the cleansing acts of soaps or detergents by the use of rough washcloths or facial brushes were unsuccessful, since the presence of hard particles is apparently essential for optimum therapeutic results.

The aim of this treatment is to create desquamation mild enough to be cosmetically compatible with daily living, but therapeutically capable of maintaining patency of the pilosebaceous follicles.

For eleven years, every patient in this study, regardless of the kind of acne, used this long-term continuous superficial abrasion. During these years, less than five patients a year were given roentgen radiation, although the number of patients treated exceeded 1,500. This unusually long clinical trial made possible many observations not previously described.

Continuous abrasion was used alone in the mild comedonal acne, and in addition to other conventional treatment in the more severe types. The few patients who did receive x-ray treatments were usually over 18 years of age, and they were only slightly more improved than those receiving the abrasive treatment alone. No hormones were included in the treatment regimen.

Technique and Observations

The general technique is as follows: On the patient's first visit, a complete history is taken regarding previous treatment, allergic sensitivity to contact materials, course of acne and oiliness of skin. The mildest abrasive soap paste is prescribed.‡ The patient is told to apply it without moistening the skin, to rub it in well with a rotary motion for approximately ten counts to each area and then remove with a washcloth and hot water. The entire washing time takes from one to two minutes—not much longer than the ordinary cleansing routine. This is done three times daily until dryness, redness and desquamation occur. It is emphasized that these reactions are desirable for good therapeutic results, and only if the skin is irritated should the abrasion be interrupted for a day or two. Then the routine is resumed, the patient being told to notice that despite the previous irritative reaction, no further obvious scaling occurs.

After a proper interval, the patient is examined and questioned to make certain that instructions are properly followed, and resistant blackheads may be expressed at that time.

At the end of three or four weeks, the skin appears smoother and the comedones are significantly reduced in number. There may even be a return of oiliness. The next higher grade of abrasive soap paste (medium§) is then prescribed with identical instructions, and the same sequence of events occurs —erythema, dryness and scaling; and these reactions again stop despite continued use of this grade of abrasion paste. By this time, most of the comedones are gone, the skin is smoother appearing and previous pitting is less noticeable.

When the skin remains oily even with continued use of the medium grade, it is time to increase the abrasive strength.¶ Each patient seems to reach an equilibrium, depending on the kind of skin and the kind of acne he has. The optimum therapeutic effect is attained when the skin remains comedo-free and minutely flaky.

Abrasive soap pastes are prepared in three grades, and in addition a paste with the same base but con-

*Index of particle Hardness: A property of substances determined by their ability to abrade or indent one another.

†Available as Brasivol® (Stiefel Laboratories, Oak Hill, New York).

‡Brasivol® Fine. (Stiefel Laboratories, Oak Hill, N. Y.)

§Brasivol® Medium.

¶Brasivol® Rough.

taining no abrasive particles is available.‖ The physician or patient can thus increase the abrasion when necessary (in times of stress and increased oiliness) or decrease it when too much desquamation occurs, as it may with increased exposure to sunlight, or with maturity when the skin is naturally drier.

It was observed that patients soon learn to control the degree of abrasion and often keep various strengths at home to use as the condition of their skin demands.

This long term continuous superficial graded abrasion is used in all patients with acne vulgaris, regardless of other treatment, which may include adjunctive treatment. When improvement is accomplished, the adjunctive treatments are discontinued but the abrasion is continued.

Most patients improve appreciably after six weeks of continuous superficial graded abrasion. The patient's tendency to finger and to squeeze the lesions disappears almost entirely, for there are fewer of them and the abrasion routine appears to replace the emotional need to scrutinize and express each lesion. Some patients become careless about the routine and omit the abrasive once the lesions abate, but oiliness and comedones then soon reappear.

Many young patients who have had severe acne with pitting have used this method for several years without consistent medical observation. When seen some months or years later, their acne pits are almost imperceptible.

The same technique is used for patients in their late twenties or in their thirties who have pits and scars but are reluctant to have abrasive treatment with a wire brush or are not suited to this technique.[3] For them, subjective and objective improvement is excellent after six months of this graded abrasion.

It was also found that if mild abrasion is begun after the erythema subsides following wire brush operations, the usual oiliness and small milial cysts do not appear.

Recently, this continuous superficial abrasion was also used for hyperkeratosis palmaris or plantaris due to tinea.

No hyperpigmentation after prolonged use was seen in Negro or Caucasian skins.

The contraindications are few. When there are a number of superficial venules (in rosacea) and/or telangiectasia (actinic sequelae), harsh abrasion is naturally avoided.

643 South Wilton Place, Los Angeles 5.

‖Brasivol® Base. The particle-free base is used in cases in which previously the skin was not washed often enough; in cases in which the skin is very sore with irritated acne or cystic pustular acne; in areas of impetiginization; when the skin gets too irritated during the abrasion phases; when there has been a superimposed sunburn; and at any time when the skin is irritated or sore either before the active abrasion technique is started or during the phases of abrasion. It is also indicated in mature women who have been used to cold creams for cleansing and who have subsequently developed acneiform eruptions. When acneiform or crusted lesions form in the scalp, it is beneficial as a shampoo.

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Narcotic Addiction

Medical and Legal Problems with Physicians

WILLIAM F. QUINN, *M.D.*, Los Angeles

THE NUMBER OF narcotic addicts in this country is probably not much greater now than half a century ago, although wider press and radio coverage dramatizes the situation. Before the Harrison Narcotic Act it was estimated that there was one addict per four hundred population, whereas the present estimate is one in three thousand. As long as there are unstable people there will be narcotic addicts, and the objective is to reduce the number to an irreducible minimum. The situation is serious, however, and particularly so to the family, friends and colleagues of the addicted person.

Almost twelve years' experience as a member of the California State Board of Medical Examiners leaves me with restrained optimism about the control of narcotic addiction in physicians. At first, there was a feeling of shock in finding addiction among friends whose ability and integrity I had admired over the years. I felt, naively as it turned out, that since they were intelligent men, it would be simple to talk to them about the problem, and convince them of the desirability of doing something about it. They appeared grateful for my interest and my sincere desire to help them, and were anxious to avoid the publicity of eventual conviction, but no good came of it, as their promises meant nothing even though their intentions were good: the habit was much stronger than they were and they continued to divert narcotics to their own use.

Certain published articles imply a tremendously higher rate of addiction in physicians than in the general population, and while this is to a certain extent true, the figures are misleading, for they are based on admissions to hospitals for the treatment of addiction, and represent evidence of the fact that the physician addict will commit himself to an institution in an effort to be cured, whereas most addicts enjoy being addicted and do not at all desire to be cured. Material compiled by Doctor Louis Jones and Mr. Wallace Thompson of the California State Board of Medical Examiners reveals a remarkably high rehabilitation rate—92 per cent—in physician narcotic addicts compared with optimistic figures of possibly 5 per cent in nonphysician addicts. This involves a five to ten-year follow-up of 130 physician addicts.

The California Board, which licenses some 2,000 physicians a year, annually considers about 50 cases of narcotic violations involving physicians. If the violation involves actual peddling of narcotics to addicts, outright revocation of the license to practice medicine is the usual penalty. The exception is made at times for the senile physician who becomes victimized by addicts who can support themselves and sustain their addiction by selling the narcotics he prescribes. The usual device is for them to give a story that their wife has migraine, dysmenorrhea or the like, and the doctor naively prescribes the narcotics. The effective management of a senile physician is to revoke his license to practice medicine but put a stay of execution on the revocation and place him on indefinite probation, one of the terms of the probation being that he be indefinitely prohibited from prescribing narcotics or having them in his possession.

If a physician is addicted and has been in an institution or in jail, or has had no narcotics available to him for a reasonable length of time, then the approach of the Board is one of rehabilitation. It has been our experience that rehabilitation is facilitated by allowing a doctor to practice medicine, but withholding narcotic privileges from him for a period of five years. A penalty is set up in this way: His license to practice medicine is revoked, but there is a stay of execution on the revocation of his license and he is placed on probation for five years. The terms of his probation may vary, but he reports frequently to the Board members, and the important provision is that he surrenders his narcotics stamp and does not prescribe narcotics nor have them in his possession during the five-year period. Interestingly, this does not make for much hardship, as his hospitalized patients can have their narcotics ordered by an anesthetist or a colleague. The penalty of outright revocation of his right to practice hanging over him is very effective. Many times, doctors have said to me that they felt we were harsh and lacked understanding and compassion when we didn't take their word for it that they understood their problem and would not return to the use of narcotics. Invariably, however, they would later

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state that once or twice or three times during the five-year period when the going was rough and they couldn't sleep, if they had had narcotics available, they would have said, "Well, just for tonight I'll tide myself over," and then would have been addicted again.

They are seen by members of the Board at various intervals, and it is pointed out to them that we want them to stay on the team and that 92 per cent of their colleagues have licked the addiction habit and we feel that they can lick it, too. It is also pointed out rather bluntly that their choice is not very wide since the 8 per cent who return to addiction usually kill themselves.

Medicine is not just a way of earning a living to most doctors—it is a way of life, and the doctor enjoys the affection of his patients, the feeling of triumph when he sees them get well, and the general aura that his work is appreciated. When this is denied to him by outright revocation of his license to practice, it is analogous to placing the average addict on the rock pile, or building roads on the desert. There might be a practical application herein where the average addict could be placed on the rock pile with a sort of indefinite probation, and be released when he showed evidence of rehabilitation, but be returned should he again use narcotics. In any event, the practical effect here, as far as the physician addict is concerned, is a very neat arrangement of the doctrine of the fear of punishment and the hope of reward.

Unhappily, very few physician addicts will break the habit on their own, and the club is necessary. The physician addict originally assumes that he can quit the habit any time he wants to, and that it is a little like alcohol which most people can either take or leave alone. It takes him a long time to realize that, once addicted, he is no different from any stumble-bum on skid row and, in a sense, has to be treated accordingly.

THE "AGONIES" OF WITHDRAWAL

There is a good deal of malarkey about the agonies of withdrawal, as physician addicts have invariably stated that physical dependence on narcotics is gone after a rather rough 72-hours or so. The mental need and the feeling that it would be nice to have narcotics, of course, never leave the addict and he must face this all his life. The length of time a man is addicted apparently doesn't have much bearing on the situation, as I well remember one physician addict of some eighteen years who traveled widely and was usually able to purchase narcotics. He was tremendously overweight, and had chronic phlebitis with leg pains which he felt justified the narcotics. When his physician friends refused to write prescriptions for his leg pains, he forged prescriptions and was apprehended. Since he had made no effort at rehabilitation, his license to practice medicine was revoked outright. He was highly indignant, pointing out that he had been taking narcotics for some eighteen years, and that the phlebitis and the pains in his legs were so severe that he had to have narcotics every four hours. When he did have them, he said, he could function reasonably well in his practice of internal medicine. We pointed out that we did not feel morphine every few hours indefinitely was good treatment for phlebitis, and he left the hearing room quite bitter. He subsequently appeared to petition for restoration of his license, and was a changed man. He had lost a good deal of weight and had not taken narcotics for a year. He stated frankly that to his astonishment, we had done him a great favor. "You know," he said, "I really was addicted and just wouldn't face up to it, but used my phlebitis as a crutch to rationalize my addiction." Interestingly, he said the pains in his legs had lessened to such a degree that they could be controlled with aspirin. His license to practice was restored but narcotic privileges were withheld for a period of five years. As a matter of fact, he stated he never wanted a narcotic license again, as he did not want to have any access to narcotics.

The narcotic addiction danger to physicians is not brought to the attention of medical students. As a result of my experiences on the Board, panel discussions on the subject were initiated about nine years ago at the College of Medical Evangelists. The representatives included law enforcement officers, Board members, psychiatrists, pastors and others interested in the subject. Partly, I hope, as a result of this, only one physician addict has turned up who has been exposed to these discussions.

The idea of establishing clinics for narcotic addicts, where the addict could be furnished narcotics cheaply, has intrigued many well-meaning people. The thought is that if the profit motive were taken away the peddler would disappear and there would be a better chance for rehabilitation. This seems a bit like second marriage; namely, evidence of the triumph of hope over experience, and is somewhat analogous to giving the alcoholic the keys to the liquor store. Proponents of the idea naively assume that the addict is a normal person as long as he can obtain narcotics. They should talk to physician addicts who point out what a meaningless way of life this represents, and that their friends, their family, their profession, their accomplishments, all mean nothing to them. They are merely preoccupied with another "shot" a few hours from now, and of maintaining a state of mild euphoria. Their judgment can be incredibly lacking. As an example, in delivering a baby, one addict in performing an episiot-

omy nonchalantly cut through into the rectum, and with no sense of remorse whatever and no serious attempt to repair the damage, merely remarked that he must have been a little heavy with the knife. In other words, as far as he was concerned, he was a normal individual at that moment. Another one, in making a house call, took off his coat and gave himself a shot of Demerol in the vein in the presence of the patient and family, and stated, "Well now, I've solved my problem. What's yours?"

Actually, narcotic clinics were tried in the early '20's in most of the major cities in this country, and were abandoned as crime increased instead of decreasing, and addiction actually increased. The fact the proponents seem to disregard is that with easy accessibility to narcotics an addict's tolerance increases and increases, and he still will want more than can be supplied, and will turn to the peddler eventually anyway. The experience of the physician addict himself should disprove the clinics theory, since the physician has had narcotics available to him and diverts his own supply or writes fictitious prescriptions as a rule for a long time before he is apprehended. In fact, it is unusual for a physician to abandon the habit before he is apprehended.

The physician addict may need psychiatric help, but it is seldom effective unless he is institutionalized where narcotics are unavailable to him. One must individualize, however, and I well remember when one physician addict was asked whether or not he had sought psychiatric help, and his explosively indignant answer of, "Hell, no!" so impressed the Board members that they felt he was a good risk for restoration. His subsequent good record justified their judgment. Unhappily also, for those who theorize that an individual is normal as long as he has narcotics, many physicians induce their wives to become addicted.

THE "ENGLISH SYSTEM"

The so-called English system which, in theory at least, allows complete control of dispensing narcotics to addicts to the judgment of the medical profession, is put forth as desirable in view of the reported low incidence of narcotic addiction in England. It should be pointed out, however, that the same laws apply in Canada, and the relative incidence of addiction there parallels that in the United States, whereas in Hong Kong, where the same laws also apply, the amount of addiction is astronomical.

It should also be noted that in England the group having the easiest access to narcotics, namely, doctors, nurses, technicians, and hospital personnel, who constitute less than 1 per cent of the population, constitute 33 per cent of the addicts. It is also of interest to note that the per capita consumption of narcotics in England is slightly higher than in the United States.

The situation is, presumably, evidence that the English are just by nature a law-abiding people, since there are sixteen times as many murders per capita in Chicago as in London, and the United States rate of alcoholism is four times that of the English, and the divorce rate ten times that of the English. The legal process in England is swift and sure, with no such paradoxes as the Chessman case. Differences in the population itself enter into the picture as well, since Negroes, Mexicans and Puerto Ricans, who constitute about 10 per cent of the population in the United States, constitute about 80 per cent of the addicts.

Law enforcement agencies have gotten away from the punitive approach to the narcotic peddler, to one of quarantine. In other words, the peddler is put in jail for life if need be, not particularly to punish him but to quarantine him so he cannot promote more addiction.

The end results of the Cahan and comparable decisions* have been to make the life of the peddler less hazardous, and the cost of heroin decrease; but it serves no useful purpose to castigate the Supreme Court as being political rather than judicial in nature. The remedy lies in legislation.

A classical example of the legal as against the practical approach was in a case heard by the California Board of Medical Examiners wherein the act was one of alleged moral turpitude and involved, among other things, giving liquor to a minor. The attitude of the Board was that in acts involving moral turpitude it should investigate the matter and take into consideration the circumstances, the intent, and all factors, and then make a decision based upon all these facts, assuming that in some instances there would be moral turpitude and in other instances there wouldn't.

The Supreme Court, to the astonishment of the Board, ruled that an act involving moral turpitude must be heinous under all circumstances and, in effect, allowed no flexibility. This threw out a previous specific decision which involved the alleged selling of narcotics to addicts. At the time of the hearing, the witnesses had disappeared, and the only accusation possible was that of failure to keep proper records. Naturally, no one should have his license revoked for a minor failure to keep proper records of narcotics. It seemed logical, however, as evidenced by the decision in this case—which incidentally stood for many years—that there would be a substantial difference between minor failure to keep records and a failure to account for

*Decisions involving strict interpretation of search and seizure laws as well as laws which prohibit keeping the identity of the informer secret.

many more narcotics in a few months' time than the average physician would prescribe in a lifetime of practice. It might still be circumstantial evidence, but as Thoreau has said, "finding a fish in the milk is the best evidence that someone put water in it." In any event, this case was specifically ruled as no longer applying, and that was that!

The upshot of the matter, however, was that it was easy to introduce and have passed legislation which specifically spelled out the fact that the Board of Medical Examiners could have the power to inquire into the surrounding circumstances in cases involving moral turpitude.

Not all cases are alike, even though the financial transactions may be identical. Naturally, the legal profession wishes to protect such freedoms as have been gained after hard fighting and are essentially to protect the innocent from harassment. There must, however, be circumstances in which different rules do apply and the promotion of narcotic addiction would certainly fall into this category, just as the rules are changed in cases in war-time involving treason and espionage.

The difference between peddlers promoting a habit which a man never loses, and which affects his entire life, would certainly justify different rules, just as there is a difference in the lifetime effect of removing a finger or a few ounces of flesh, and removing a man's testicles or a woman's ovaries, even though the amount of tissue might weigh about the same.

In fact, legislation has been introduced in California which would allow evidence in narcotic cases to be introduced, no matter how the evidence was obtained. While effective law enforcement may seem a blunt way of approaching the problem, it should be pointed out that during the war years, when there was complete control and inspection of ships entering and leaving our ports, addiction in this country was at a minimum.

One shouldn't quarrel too much with success. The approach of the problem of kindly encouragement, with removal of easy access to narcotics but with the club of outright revocation for violation, has proven highly successful.

1930 Wilshire Boulevard, Los Angeles 57.

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CALIFORNIA MEDICAL ASSOCIATION ANNUAL SESSION

Presidents' Dinner Dance

Sunday, April 30

FOR RESERVATIONS, SEE PAGES 260 AND 261

Coronary Arteriography

HARRY A. BISHOP, *M.D.*, and
BERNARD J. O'LOUGHLIN, *M.D.*, *Ph.D.*, Los Angeles

• **The rapid injection of opaque media through a large bore, closed-end, side-hole catheter positioned adjacent to the sinuses of Valsalva reliably opacifies the coronary arteries. The potential toxicity of a rapidly introduced large volume of contrast agent and the necessity of peripheral arteriotomy are drawbacks of this procedure.**

Such innovations as loop-ended catheters, balloon occlusion of the aorta, percutaneous arterial catheterization and acetylcholine cardiac arrest have been introduced as attempts are made to increase the reliability and safety of coronary arteriography.

A NEED FOR X-RAY visualization of the cardiac vessels has been stimulated by the development of surgical treatment of coronary artery disease. Evaluation of patients being considered for endarterectomy should include the localization of the occluding atheromata, which can best be accomplished by angiography.[4,20]

Thoracic aortography, wherein contrast material is deposited in the ascending aorta, often delineates the coronary arteries to some extent.[13,19,28] Various methods of administration of the contrast agent have been employed, including needles directed from various sites (sternal,[32] parasternal,[26] transcarotid[24]) or catheters inserted through various arteries (radial,[6,19] brachial,[39] femoral[15]). The use of needles has resulted in cardiac arrhythmias, aortic tearing, extravascular injection and mediastinal hemorrhage. Although using the larger catheters requires peripheral arteriotomy, they have proven to be less dangerous than the needles.

Regardless of the route of administration, the contrast material is swept away within two or three cardiac cycles by the high speed aortic bloodstream. To increase the probability of coronary opacification a high rate of contrast injection is required. The rate of flow of the contrast fluid is proportional to the fourth power of the catheter diameter and to the pressure of injection. It is inversely proportional to the fluid viscosity and catheter length. Thus, to increase the injection rate a maximum catheter diameter is most important. Increasing the diameter from 1 mm. to 3 mm. makes possible an 81-fold increase in flow rate.

In our present method of coronary arteriography a 3 mm. inside diameter radiopaque catheter is introduced through a femoral arteriotomy and under fluoroscopic observation the tip is positioned adjacent to the sinuses of Valsalva. At this point, 0.7 cc. per kg. of 50-70 per cent iodinated contrast medium, heated to body temperature to reduce viscosity, is introduced under a pressure of 6 kg. per cm.^{2} with an automatic injector. The catheter has several small spirally arranged side holes near the closed tip[15] to reduce recoil and give better distribution of the opaque medium. A flow rate of 60-90 cc. per second is achieved. The coronary arteries thus opacified are recorded by simultaneous biplane x-ray exposures taken at the rate of 6 per second.

By this method dependable coronary visualization results. Figure 1, for example, shows a coronary angiogram in which 45 cc. of Ditriokon® was introduced in 0.7 second. The patient is a 43-year-old

Figure 1.—Coronary arteriogram of a patient with angina pectoris. The right coronary artery is occluded near its origin and the left is narrowed at its bifurcation.

From the Department of Radiology, University of California at Los Angeles School of Medicine, Los Angeles 24.

Presented before the Section on Radiology at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

man with diabetes who had had myocardial infarction five years previously and had had disabling angina for two years. The angiogram showed that the right coronary artery was occluded near its origin and that there was a narrowing of the left coronary at the bifurcation. These observations were confirmed on the following day when endarterectomy was performed on the occluded right coronary artery.

While this technique of angiography does give visualization of the coronary arteries, it entails the inconvenience of peripheral arteriotomy and the significant danger of toxicity associated with injection of contrast media.

In an analysis of over 1,700 thoracic aortographic examinations performed with organic iodides, Abrams[1] noted a 1.7 per cent mortality and a similar percentage of severe reactions including hemiplegia, convulsions and anuria. There were eight times as many deaths associated with the use of 70 per cent contrast solutions as with the 30 to 50 per cent solutions.

Experimental studies[14,16,27] have shown that all the currently available angiographic contrast media produce some toxic effects when used for coronary visualization.

Since the pioneer experiments in 1932 by Rousthoi[34] in Germany and Reboul and Racine[33] in France, a number of investigators[12,22,31] have attempted to improve coronary arteriography in experimental animals. Direct catheterization of the individual coronary arteries is feasible in dogs,[40] and has recently been achieved in humans by Sones.[38] The method requires considerable technical skill and is associated with the possible hazard of coronary ostia occlusion. The individual sinuses of Valsalva, however, may be catheterized with less danger, thereby achieving selective opacification of the right and left coronary arteries.

Loop-End Catheter

Williams and coworkers,[41] using a polyethylene catheter with a perpendicular loop at the end, produced detailed coronary angiograms. With the loop positioned above the aortic sinuses, three side holes in the circumference emit streams of opaque media directed toward the coronary ostia. The curved end is straightened over a guide wire for introduction by way of a peripheral artery. While this ingenious device shows considerable promise, there is some danger of blood clotting in the catheter beyond the proximal side holes, causing embolization.

Balloon Occlusion

One method of overcoming the aortic blood flow and reducing the amount of contrast material is aortic occlusion. A metal sound with a distensible balloon just above the coronary ostia was originally developed by Agress.[2] A similar device introduced through the carotid artery was applied to coronary arteriography by Cannon[5] and McFall.[25] The use of a balloon occlusion catheter by Dotter and coworkers[7] resulted in excellent coronary studies in dogs, but attempts at human application have been frustrating. It is difficult to maintain the position of the balloon in the aortic bloodstream and sometimes it tends to herniate through the aortic valves or occlude the coronary ostia. Increased cardiac work associated with hypertension proximal to the balloon might prove dangerous in patients with coronary insufficiency. Another disadvantage is that it necessitates an arterial cut-down big enough for the relatively bulky balloon catheter.

Cardiac Arrest

A promising technique is that of coronary visualization during pharmacologically induced cardiac arrest. Acetylcholine has proven to be the ideal agent for this purpose. When introduced into the proximal ascending aorta it produces almost immediate cardiac arrest in diastole. An asystole of a few seconds' duration is reliably controlled by the dose administered. As the drug is inactivated by tissue contact, cardiac contraction resumes and, after a fleeting partial heart block, regular sinus rhythm is reestablished. If necessary the action of acetylcholine can be stopped instantaneously by atropine, the ideal antidote.

The investigations of Dotter and coworkers,[7] Arnulf,[3] and Fabrikant and coworkers[10] have shown acetylcholine arrest to be safe and reliable in dogs with normal and ischemic hearts. Electrocardiographic monitoring, serum transaminase determinations and histologic examinations have failed to detect any significant myocardial alterations following repeated episodes of acetylcholine arrest. Our own observations confirm the safety of this procedure in the experimental animal.

This technique would seem to offer several advantages. The coronary arteries which normally fill during diastole show excellent filling during arrest and a capillary filling phase appears which delineates the myocardial walls. A smaller amount of less concentrated contrast material can be used, thus greatly reducing one of the primary hazards of this procedure. And since the extremely rapid flow of contrast is not required, a smaller catheter may be introduced percutaneously,[8,30,35] thus obviating the necessity of arterial cut down. During cardiac arrest there is no need for rapid sequence filming, short exposures and precise exposure timing. Hence, no special x-ray equipment is required.

Acetylcholine, which causes peripheral vasodilatation, apparently does not inhibit coronary spasm.

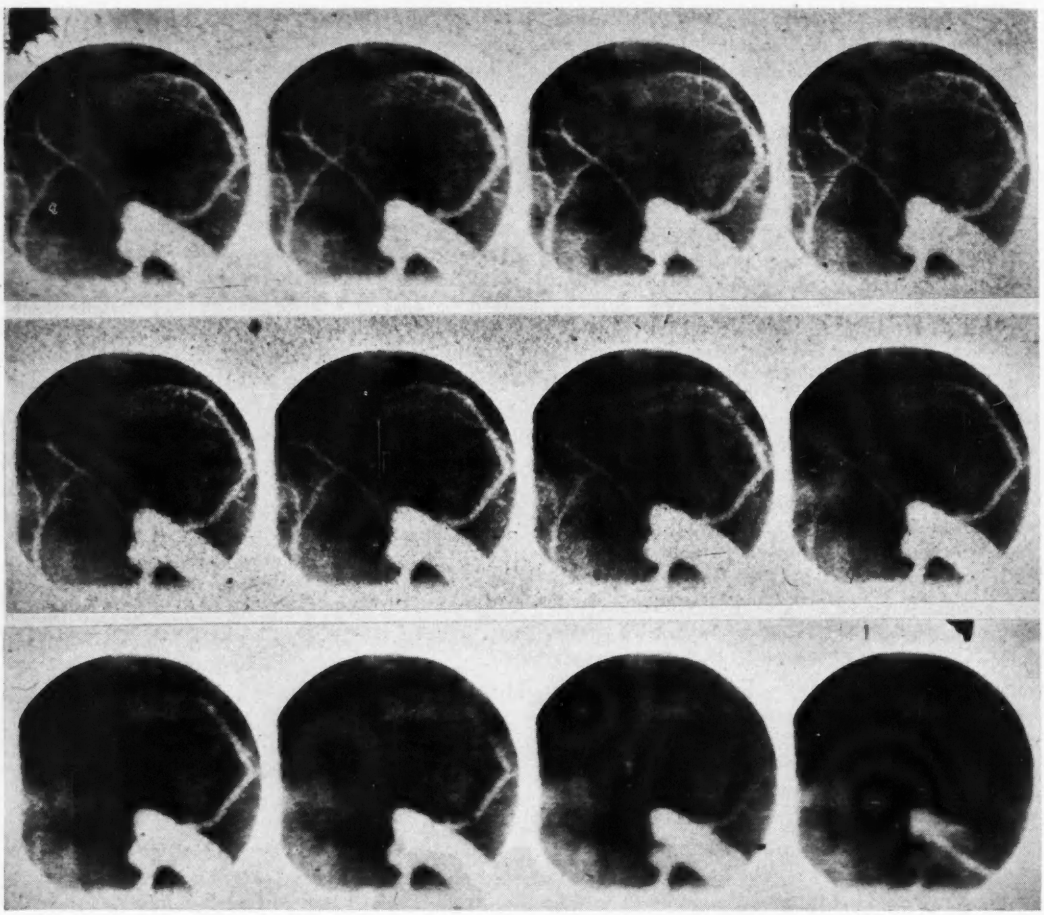

Figure 2.—Sequential frames from a 16 mm. cine angiogram of a dog showing progressive filling of the coronary arteries.

Using acetylcholine arrest, Arnulf[3] demonstrated decided spasm of the coronary arteries while the patient was suffering angina pectoris. Another examination, after the angina was relieved by a coronary vasodilatator, showed normal-appearing coronary arteries. It is interesting that this technique has demonstrated operable coronary occlusive disease in the absence of electrocardiographic changes.[4]

Although harmless in dogs, the safety of cardiac arrest angiography remains to be established in humans. Dotter and coworkers[7] reported a fatality resulting from the use of acetylcholine in a digitalized patient. In combination with digitalis, acetylcholine causes myocardial irritability rather than cardiac arrest. In the case reported by Dotter, irreversible ventricular fibrillation occurred. Lehman and coworkers[21] reported convulsions on several occasions when this technique was used. However, it is not clear whether the cardiac arrest or the contrast agent toxicity was responsible. While the group of patients reported by Arnulf[3] had no ill effects from the transient cardiac standstill, moderate bronchospasm occurred when the acetylcholine was given intravenously.

A possible disadvantage of the cardiac arrest method is that changes that occur during the cardiac cycle are not demonstrated. It has been noted for instance, that the left coronary artery becomes tortuous during systole and that the aortic diameter increases, giving a potential measure of arterial distensibility.[17]

The establishment of acetylcholine arrest arteriography awaits further clinical trial.

The combination of balloon occlusion and cardiac arrest has resulted in beautifully detailed coronary studies in dogs[11] and this method would seem safer than balloon occlusion alone for human application.

Motion Pictures

The anatomic and physiologic information obtainable from coronary angiography may be increased by cinefluorographic recording. We have used this method in the evaluation of cardiac arrest arteriography in dogs (Figure 2). Winter and Lehman[42] used cinefluorography to record acetylcholine arrest coronary angiograms as the animal was being rotated. A three-dimensional appreciation was obtained as the dog rotated through a full 180° cycle during the film sequence. Sloman[37] reported on the use of cinefluorography of the aortic valve and coronary arteries during cardiac arrest in humans. This technique will improve as larger image intensification screens are perfected.

Sones and coworkers[38] used x-ray motion pictures to show the areas of distribution of the major coronary vessels as they were serially opacified by contrast injected into the sinuses of Valsalva or into the individual coronary ostia.

The unsolved problem in coronary angiography is the toxicity of the available radiopaque contrast agents. Dotter advocated the use of thorium dioxide, which is free of the immediate toxic effects of the other agents and produces excellent opacification. However, it is very irritating if accidentally deposited in the soft tissues, and, being radioactive, probably has a long-term carcinogenic effect.[23] As other forms of contrast agents such as the heavy metal chelates[36] are investigated, a safer agent may be discovered.

Should a less toxic opaque material be developed and should transient cardiac arrest prove innocuous, coronary arteriography should become a routine diagnostic study for all patients suspected of having coronary artery disease.

U.C.L.A. School of Medicine, Los Angeles 24 (Bishop).

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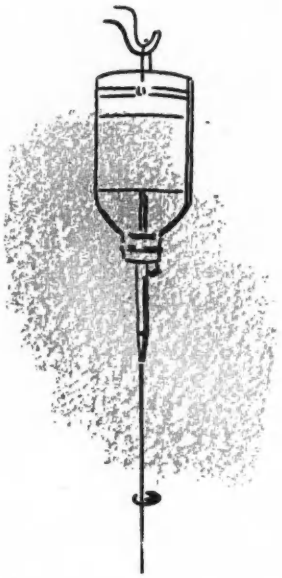


Hardware in Orthopedic Surgery

HOWARD A. MENDELSOHN, *M.D.*, Beverly Hills

• **Insertion of foreign material into the human body has been performed with increasing frequency during the past 50 years and has received added encouragement in the antimicrobial era. Nevertheless, no matter how rational the utilization of these inflexible foreign bodies may seem, their introduction into the human framework is accompanied by evidence of nature's intolerance to hardware when substituted for living tissue. Numerous surgical complications occur following the use of internal fixation and prosthetic devices in orthopedic surgery.**

THE USE OF RIGID MATERIALS, such as metal and plastic resins, for prosthetic and reconstructive devices holds a special allure for orthopedic surgeons. Insertion of foreign objects into the human body has been performed with increasing frequency during the past 50 years and has received added encouragement in the antimicrobial era. A comprehensive historical review along with a wealth of other relevant information regarding the use of metallic implants is provided in the recently published book of Bechtol, Ferguson and Laing.[1]

There are recorded instances of the use of metal for internal fixation of fractures in the 18th Century: Iron, gold, silver, lead, platinum, brass, aluminum, magnesium, copper, zinc and nickel all have been wrought ingeniously into devices which were implanted in or onto human bones. More recently the plastic resins have been tested in the crucible of experimental surgery. Vanadium, triconium, tantalum and titanium[2] had their day in the surgical sun, and in fact still offer considerable appeal to the orthopedic engineers. The present era looks with favor most upon stainless steel and vitallium, which are regarded as having the least objectionable and the most acceptable qualifications for *in vivo* implantation. New metal alloys are currently being tested extensively both in animals and in humans, apparently with the hope that living tissue will learn not to resent foreign intrusion.

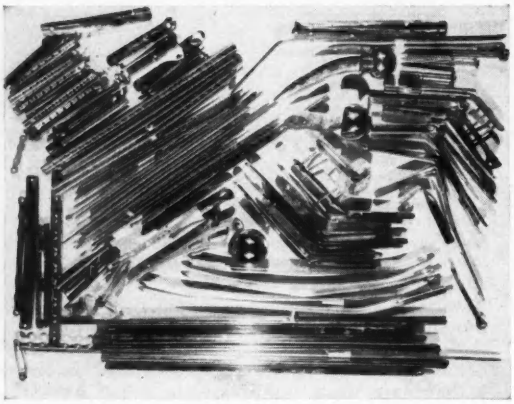
Nevertheless, no matter how rational the utilization of inflexible foreign bodies may seem, their introduction into the human framework evokes evidence of nature's intolerance to hardware when substituted for living tissue. Surgical complications frequently encountered following the use of internal devices for fixation and prosthesis include wound infections, unfavorable foreign body reactions, postoperative fractures of the devices and of the bone into which they are introduced, and numerous manifestations of nature's attempts to sequestrate or extrude extraneous material. Evidence of these natural responses takes many forms, and McDougall's[5] report of a malignant tumor developing in the soft tissues at the site of a bone-plating operation performed 30 years before exemplifies one kind of tissue reaction to metal corrosion and electrolysis. McDougall concluded that "a careful consideration of the history and clinical course [of the case] indicates that the tumor arose because of the presence of the metals."

Such admonitions are, of course, not new, and it would seem appropriate to quote King's[4] comments on this subject: "Laymen and even some physicians tend to think of bone as an inert, unchanging substance and that a metallic implant is even more static and indestructible. Nothing could be further from the truth. Metals tend to oxidate or corrode, this process being assisted by the acid environment of a fresh fracture, the salinity of tissue juices or the electrochemical action of dissimilar metals of an electrolytic process set up between areas. Furthermore, it is now recognized that corrosion may occur between two pieces of similar metal or between different areas of the same plate because of varying degrees of hardness. Against this, metal has a limited capacity to resist corrosion by the spontaneous formation of a thin film of oxide on its surface. Scratching or bending a metallic implant during insertion removes this protective film and hastens the corrosive process. Metals continually shed so that the surrounding soft tissues are slowly saturated with metal which may lead to aseptic inflammation many years after implantation. For this reason metallic implants in young or middle-aged people should always be removed when they have served their purpose."

On the Orthopedic Service at Los Angeles County General Hospital, an astounding quantity of metal and plastic contrivances has had to be removed from bones and joints because of various complications. Approximately 40 pounds of such exotic material excised during the period January 1959 to January

From the Department of Orthopedic Surgery, Los Angeles County General Hospital, and School of Medicine, University of Southern California, Los Angeles 33.

Chairman's Address: Presented before the Section on Orthopedics at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.



Photograph exhibiting variety of hardware excised during an eleven-month period, 1959-1960, at Los Angeles County General Hospital. The total weight was about forty pounds.

1960 is now carefully stored at this hospital for the agonizing reappraisal of the staff orthopedists, who were not necessarily responsible for the insertion of these devices. This metallic avoirdupois does not include standard-sized metallic screws, uncounted numbers of which were removed and immediately discarded. I believe it would be fair to regard the figure of 40 pounds mentioned above as an understatement. The number of patients operated upon and the diagnosis in each case are not considered pertinent to this discussion. However, it is relevant to mention that the Orthopedic Service had 5,187 in-patients in the fiscal year 1958-59.

In 1941, Key[3] warned that internal fixation of fractures should be undertaken only when such intervention would be essential to the successful management of the case. Key's voice, it would seem, is in danger of being muted by the rising clank and clangor of the Metal Age.

It does not seem amiss therefore in a surgical era of hardware and gadgetry to offer a gentle reminder that new techniques in metallurgy and carpentry need not be equated with progress in orthopedic surgery.

415 North Camden Drive, Beverly Hills.

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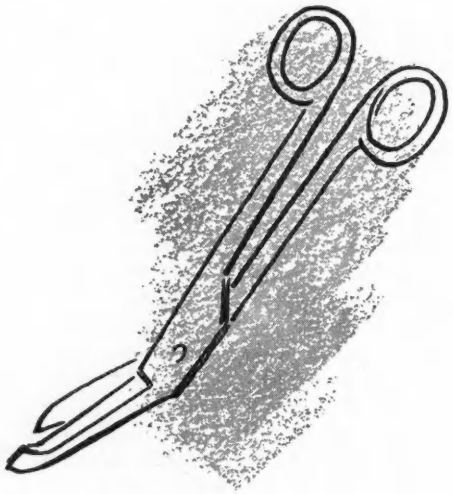

The Electroencephalogram in Pediatrics

The Indications for Use and the Limitations

MERL CARSON, *M.D.*, and RICHARD D. WALTER, *M.D.*, Los Angeles

• **Electroencephalograms normally undergo pronounced serial changes during maturation of the brain.**

Many physiological and nonphysiological influences may alter the EEG tracing.

As regards EEG's, appraisal of cerebral function is based on comparison with normal standards of frequency, rhythm, wave configuration and amplitude, bilateral synchrony, and response to various physiological stimuli.

Various abnormal EEG patterns are fairly constantly related to concomitant clinical disease.

A laboratory tool which may be used to supplement clinical data but not to make a clinical diagnosis, the EEG may also sometimes be of value in helping to suggest prognosis and in helping with evaluation of a therapeutic program.

ELECTROENCEPHALOGRAPHY, the study of electrical activity of the brain, has been made possible by development of electronic machines which amplify and record this activity upon a moving chart. The activity in numerous parts of the head is simultaneously tested through individual amplifiers, and from these recordings an accurate appraisal of departures from norms can be made. Electrical activity recorded in any one amplifier (channel) does not represent total discharge from a single underlying segment of brain, but represents the difference in electrical potential between two areas underlying two connecting electrodes.

Cellular physiologists have concluded that periodic electrical discharges are a function of all living cells. The exact mechanism may not be entirely elucidated but a difference between intra- and extra-cellular potential is apparently a function of the semipermeable cell membrane and ionic transfer. It is likely that these discharges are the by-product of cellular metabolism and ordinarily have no specific function. The origin of these discharges in the central nervous system was formerly thought to be the axons of nerve cells. New histochemical evidence suggests instead that they may originate in apical dendrites of the third cortical layer.

Serial electroencephalograms normally undergo pronounced changes during the period of anatomical and functional development of the brain. It is postulated that the earliest cortical, electrical activity appears when adequate numbers of nerve cells have developed there, even before definitive interneuronal connections are established. Then, as the number of cells increases, there is increase in amplitude with continued lower frequency waves; and at last as myelination and functional connections become complete, the wave amplitude decreases and the frequency increases, developing into the mature, adult wave pattern.

Studies by Lindsley, Henry, Smith, Gibbs and others have clarified details of the normal maturing electroencephalogram (EEG) of children. At birth, irregular, slow 0.5-3.5 cps. (cycles per second) waves are present over the cortex with accentuated activity over the parietal areas. At six months there is high voltage, 4-6 cps. activity maximal over temporal and occipital areas, which increases to 5-8 cps. by one year of age, especially evident over the occipital area. By four to five years there is a steady 7-8 cps. activity in the occipital area, which increases to the adult 9-10 cps. wave pattern by nine years. At this age, however, an excess of slow 5-7 cps. waves is still present over the parietal and temporal areas. Typical adult patterns are frequently seen at age 12 years and by 19 years almost all persons have adult configurations.

Physiological Variables. The normal EEG may be influenced by many physiological variables,[12,15] some of which are incorporated in the routine study of each patient. Drowsiness and sleep profoundly affect the EEG, causing slowing and increased amplitude of waves. This pattern may appear in short runs and be confused with seizure discharges. High voltage, spike-like 3-8 cps. waves, termed *biparietal humps* are common over frontal and parietal areas up to nine years of age. With increasing age they tend to become smaller and are more confined to the parietal areas. Sleep spindles of 12-14 cps. are evidence of light sleep and tend to disappear with deeper sleep. Very deep sleep is characterized by generalized slow 0.5 to 2.0 cps. waves. Hyperventilation for a standard period of three minutes re-

From the Division of Neurology, U.C.L.A. Medical Center, Los Angeles 24.

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sults in the reduction of carbon dioxide tension in blood and tissue fluids. Cortical pH increases and cortical electrical discharges become greater in amplitude and slower in frequency. Certain neurological disorders may be symptomatically induced by this cortical stimulation, such as initiation of convulsive phenomena in patients with petit mal epilepsy. Oxygen and glucose constitute the main energy sources of the brain. A decrease of 30 per cent in internal jugular vein blood oxygen tension results in a sudden shift of cortical activity to slower frequencies. Glucose oxidation accounts for over 90 per cent of brain cell respiration and a deficiency thereof results in a steady lowering of cortical electrical activity. Light-stimulated epileptic seizures have long been recognized and Berger first noticed alteration of normal EEG rhythm by photic stimulation of the retina.

It is common for clinicians to be doubtful regarding proper indications for an EEG examination. The procedure is valuable in providing a safe, easy method of evaluating functioning cerebral activity. Therefore, it can be helpful in evaluating patients with convulsive disorders or other clinical conditions that suggest cerebral functional abnormality. It is a supplement to clinical observation, not a substitute for it. As a laboratory procedure it is subject to various limitations and artifacts.

Evidences of cerebral malfunction are necessarily somewhat limited by the mechanical, two dimensional tracings. Tracings are adjudged normal because of conformance with standards of the frequency of rhythm, wave configuration and amplitude, bilateral synchrony, and response to various physiological stimuli such as hyperventilation, sleep and photic stimulation. Variation in these components is due to alteration of cellular electrical activity caused by altered intracellular metabolism. Although this metabolic abnormality may be due to a wide variety of causes, there is so little difference among them insofar as EEG activity is concerned that making fine etiological classification of abnormalities is exceedingly difficult or impossible, except in a certain few instances. This is particularly evident in patients with seizures that are secondary to anatomic cerebral abnormality (symptomatic epilepsy).

SYMPTOMATIC EPILEPSY

The abnormalities of symptomatic epilepsy may be derived from widely diverse causes. Birth trauma and anoxia, inflammatory diseases of the brain and meninges, and abnormalities of development are the most common factors in early infancy and childhood. In older children metabolic disorders and trauma assume greater importance. The brain damage may be diffuse or localized, mild or severe. In severe cases considerable neuronal destruction may result in an area or areas of electrical silence. Nearby cortex may contain normally functioning neurons with interposed cortical neurons damaged and functioning in an abnormal manner. Discharges from this abnormally functioning area cause the periodic seizures seen in patients with symptomatic epilepsy. Diffuse cerebral damage is usually reflected by varying seizure patterns such as generalized, myoclonic massive spasms.

The great majority of clinical seizures are referable to anatomic cerebral damage. Etiological factors responsible for the damage may be grouped into several large categories.

1. *Physical and Toxic:* (Trauma and anoxia); birth injury; anoxia; closed head injuries; cerebral vascular occlusion; poisoning (lead, thallium, barbiturate, etc.); subdural hematoma.

2. *Inflammatory:* Viral, bacterial, and parasitic meningoencephalitis; brain abscess; postimmunization encephalitides; acute cerebellar ataxia; inclusion body encephalitis.

3. *Congenital and Developmental Malformations:* Sturge-Weber syndrome; mongolism; microcephaly; hydrocephalus; tuberous sclerosis; abnormalities of gyri and cerebral cortex.

4. *Metabolic and Degenerative Disorders:* Disease of cerebral white matter, (Schilder's disease, cerebral sclerosis of Krabbe, etc.); disease of cerebral grey matter (Tay-Sachs disease, Niemann-Pick disease); phenylpyruvic oligophrenia; thyroid disease.

5. *Intracranial Space-Occupying Mass:* Tumor; cyst.

Although the EEG in some of the above conditions may suggest specific etiologic factors, in most it will show a nonspecific response to cerebral damage. When the damage is moderate and diffuse, there is an initial slowing of frequency and increase in amplitude. If hyperventilation can be carried out, the response will likely be exaggerated with bursts of diffusely symmetrical, slower and higher waves. Progressively severe damage will be reflected by diffusely slower waves, 0.5 to 3 cps. with amplitude and frequency decreasing with increasing cerebral impairment, the recording becoming completely flat in patients with the most severe damage. Response of this type is obtained in widely diverse problems—as in acute head injury,[4,16] inflammatory meningoencephalitides,[18,19,22] in anoxia and poisonings—and is truly nonspecific. Patient recovery is attended by reversal of the above pattern, and if permanent damage has not occurred the normal EEG pattern for the chronological age will emerge.

In cases of permanent damage, persistent, slow waves and hyperventilation lability may be seen.

Certain conditions warrant further elaboration because of specific individual features. In infants with subdural hematoma or effusion the EEG is less helpful than in adults.[25,28] Various abnormalities have been described, such as focal 0.5 to 3 cps. waves or flattening over the affected side, generalized diffuse slowing, suppression of normal occipital alpha rhythm, and occasionally normal tracings.

Studies in cerebral palsy[1] indicate a correlation between abnormality of the EEG and seriousness of brain damage. Abnormal tracings were found by Perlstein and coworkers[23] in 90 per cent of a group of 212 such patients with accompanying convulsive seizures, and in only 44 per cent of those without seizures. They are most common in patients with spasticity and less common in those with ataxia or athetosis. The 4 to 6 year age group had the greatest number of abnormal EEG's, with spike waves in 77 per cent and petit mal discharges in 1 per cent.

Dawson's inclusion body encephalitis is a chronic, progressive illness, usually beginning in young childhood. The onset is insidious with gradual, progressive loss of intellectual achievements, increasing irritability, followed by increasing stupor, coma and death. EEG studies[7] demonstrate progressive disappearance of normal rhythms with appearance of episodes of high voltage, slow waves (1.5 to 3 cps.) which become periodic, approximately at 8-second intervals. These are interspersed with pronounced flattening of activity. Cobb and coworkers considered that order of encephalographic changes as characteristic of the disease, but Lesse and coworkers[18] described similar observations in encephalitis of other types, diffuse vascular disease (one patient) and congenital cerebral anomaly (one patient). One cannot then state this EEG complex is pathognomonic of Dawson's encephalitis, although its appearance strongly suggests this diagnosis.

Microcephaly has been associated with abnormal EEG's in 73 per cent of a study group[10] with direct relationship between clinical severity of disease and degree of EEG abnormality. Many kinds of electrical abnormalities were found but the most striking feature was presence of decreased amplitude in 63 per cent of cases. In hydrocephalus the EEG abnormalities are similarly varied, with flattening present in the more severe cases.[9]

Degenerative diseases of the cerebral cortex are characterized by early disruption of the normal rhythm[6,8] by slower waves. There is progressive disorganization with generalized runs of 2 cps. waves accompanied by irregularly appearing, nonfocal spike waves. Visible myoclonic jerks frequently accompany the EEG spikes.

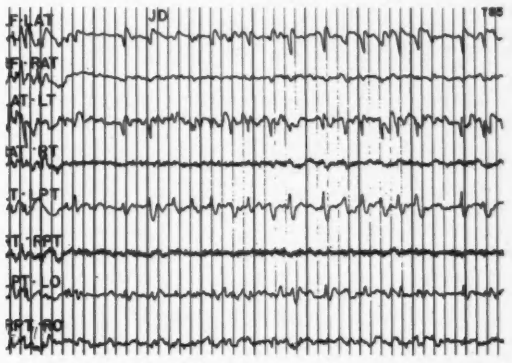

Figure 1.—Localized spike waves with phase reversal over left temporal area.

Space-occupying intracerebral masses may cause electrical abnormality.[3] Static, noninflammatory cysts or tumors near the cortex will usually cause some localized slowing, but if they be deep there may be no manifest EEG abnormality. Subtentorial tumors are more common in pediatrics and commonly cause bilaterally synchronous, high voltage slow waves with no focal or paroxysmal features.

Psychomotor or temporal lobe seizures are characterized by bizarre patterns of abnormal and inappropriate behavior.[21] These commonly occur as repetitious, semipurposeful movements, performed without the patient being conscious of the event. They may be of only a few seconds' duration, or may persist for hours. The termination of the seizure is usually marked by confusion and amnesia for the entire episode. The EEG concomitants may be quite variable. Gibbs emphasized the importance of spike foci over the anterior temporal area (Figure 1). The waking EEG is frequently normal, sleep being necessary to activate the electrical abnormality.

Infantile spasms are usually associated with a characteristic EEG pattern known as *Hypsarhythmia*.[5] Children with this condition frequently appear to develop normally until onset of seizures, usually during the first year of life. Mental impairment becomes evident with increasing frequency and severity of seizures. The spasms are characterized by a single or repetitive, flexion and adduction movement of limbs and body. Occasionally these may be extensor or a mixture of both movements. These seizures frequently disappear when the patient is about 3 years of age, but usually mental retardation persists. The EEG pattern is one of pronounced disorganization with high voltage slow waves and multiple spike foci (Figure 2). The bursts of abnormal waves are frequently followed by a short period of decreased electrical activity. Asynchrony and asymmetry are common findings.

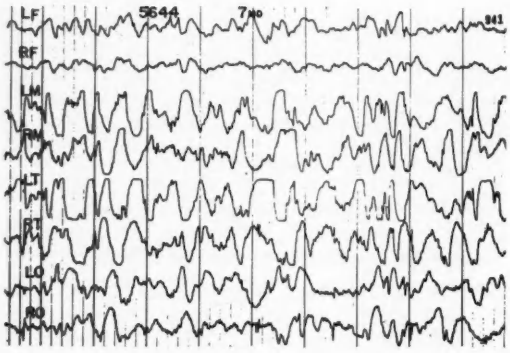

Figure 2.—Disorganization of normal rhythm with diffuse, asynchronous slow waves and spikes.

Figure 3.—Diffuse, repetitive spike waves, each followed by suppression of activity. This patient had mental retardation, but without clinical seizures.

In some patients unusual, variable, paroxysmal symptoms—atypical epilepsy—replace overt convulsive movements.[21,30] Pain may be present in any portion of the body, most commonly referred to the head or abdomen. Dizziness or fainting also occur and must be differentiated from the same symptoms due to hypotension. Episodes of unrational rage, laughing or weeping are occasionally noted, as well as autonomic disturbances of sweating, flushing, vomiting and shivering. The most characteristic EEG feature is the appearance of 14 and 6 cps. positive spikes over one or both midtemporal areas. These are frequently only present in the sleeping EEG. Although this finding has been described in some patients with various psychiatric disturbances, including "behavior problems," it should not be construed that it will be present in the case of every nonconformist child.

IDIOPATHIC EPILEPSY

The group of conditions included under idiopathic epilepsy are characterized by specific clinical seizure patterns, absence of abnormal neurological findings, high familial incidence and lack of known etiological factors. In instances in which postmortem brain examination has been possible, no anatomic abnormality can be discerned. It is assumed a physiological cerebral defect is present. A brief correlation of clinical and EEG findings follows:

Generalized seizures have neither focal features nor focal aura although sensations of epigastric fullness or a "funny feeling" may be described. The EEG is not specific for this condition and may show a normal interseizure record, or there may be generalized bursts of abnormally fast or slow waves, spikes or sharp waves (Figure 3).

Petit mal is very characteristic with an onset around 4 to 10 years of age, and with the lapses or staring spells of very brief duration. These usually disappear during adolescence. The EEG is characteristic[13]: Normal electrical activity is interrupted by generalized, bilaterally synchronous, 3 per second spike and wave complexes (Figure 4). Hyperventilation is a potent activator of this abnormality. Infrequently the staring spells may be accompanied by myoclonic jerks of muscle groups or the extremities. In these instances the EEG may show the same 3 per second spike and slow waves, but with accompanying multiple spikes.

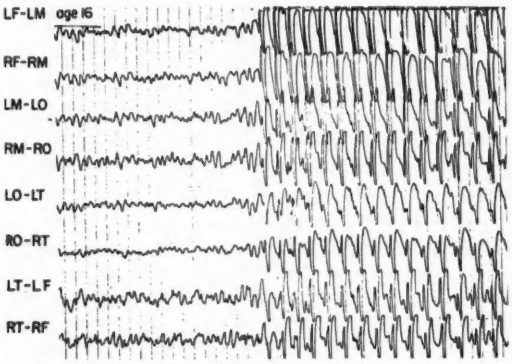

Figure 4.—Showing typical 3 cycles per second spike and slow wave complexes in petit mal, beginning mid-way of tracing.

FEBRILE CONVULSIONS

Febrile convulsions constitute a special problem of clinical management and prognosis. In addition to the clinical clues or short duration, generalized seizures developing only with fever, and a positive family history, the EEG will probably be normal in approximately 95 per cent of patients[17,20] who never develop afebrile convulsions. By contrast, a high percentage of patients with initial febrile convulsions, but with abnormal EEG's, will eventually develop afebrile convulsions.

REPORTING ON EEG EXAMINATION

The EEG report to the attending physician must be clear, succinct and interpretive, but must carefully avoid making a clinical diagnosis or prescribing therapy. If the tracing is sufficiently characteristic, the encephalographer should suggest that it is compatible with a certain kind of pathological process, but should avoid making a clinical diagnosis.

Prognosis of the disease may frequently be confidently outlined. For example, demonstration of the classical 3 per second spike and wave in a patient with lapse attacks suggests a probably excellent long-term outlook. Appearance of the disorganized pattern of hypsarhythmia reflects a very poor outlook for normal mental and motor development.

Evaluation of therapy is also a function of repeated electrical examinations. Disappearance of EEG abnormalities following therapy is good evidence of improvement but the decision regarding modification of therapy must be made by the clinician.

1820 Lincoln Avenue, Anaheim (Carson).

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The Child Who Does Not Talk

EDWARD H. SENZ, *M.D.*, Berkeley

• **The majority of normal children will have developed some speech by the age of two years. Significant delay in speech development may be the result of (1) deafness, (2) mental retardation, (3) faulty innervation of the speech organs, (4) aphasia, (5) autism, (6) a family trait, (7) hospitalism, (8) parental neurosis, or (9) some combination of these factors. Each nonspeaking child needs an individually planned study for precise diagnosis and recommendation for treatment.**

THE FAILURE of a child to speak at the expected time will bring inquiries to the child's physician from the worried parents. It is not possible for all physicians to children to be experts in pathologic interference with speech, for it is a difficult and highly specialized subject. But since physicians will be the first consulted about a speech problem, they should know something of the normal patterns of speech development, the acceptable variations, what constitutes an important speech problem and the common causes of speech troubles.[3]

Human speech is an intricate function depending upon the integrity of various areas of the brain, the hearing apparatus, the organs of articulation and phonation and the intelligence; and it is affected by a great variety of psychological experiences. Speech does not arise abruptly, but follows a consistent pattern of development, no matter when it starts. Vocalization beyond crying normally begins in the early months of life, and by the end of the first year the infant makes a variety of sound combinations at various pitches, inflections and volumes, and is aware of the influence of this on others. During the same period the infant responds increasingly to language. By the end of the first year many children have acquired a few true words. From 12 to 18 months there may be little apparent progress in language development, but after 18 months language development should be rapid, and the period from two to four years is a critical one.

A child's speech may be deficient in quantity or in quality. The qualitative defects are the disorders of articulation and phonation. These frequently are functional in the same sense that many childhood problems of eating and elimination are functional. Problems of articulation may be due to organic disorders which, when more severe, limit the quantities of speech. For example, severe deafness of early onset prevents all speech; milder deafness may allow speech with faulty articulation. Anomalies of the speech organs proper, such as cleft palate, usually produce qualitative problems rather than quantitative ones.

In this presentation, discussion will be limited to the child whose speech is delayed in onset. Arbitrarily, it can be said that speech is delayed if it has not appeared by the age of two years. Most children make some sounds and complete mutism is rare, although it may occur in congenital deafness, idiocy, hysteria, schizophrenia and extreme negativism.

There are relatively few causes for delay in speech onset, and I will discuss the eight which are operative in the majority of cases.

1. *Deafness.* Severe deafness of early onset either prevents speech development or quickly abolishes what speech has been developed. A congenitally deaf child may make some of the babbling and cooing noises of infancy, but either stops this or does not progress from there. An alert and experienced mother will be aware of, and complain of, the baby's lack of response to speech and his failure to experiment vocally, so early diagnosis can be made. If the parent is inexperienced, early diagnosis will be made only if the physician in his routine care asks about vocalization and the child's response to voices. In this connection, intact hearing is not proved by a startle reflex, eye blinking, and head and eye turning in response to sound, since these are subcortical reflexes which appear even in the absence of cortical hearing. Excellent methods for training deaf children are available, and early diagnosis will prevent many problems that otherwise will arise.

2. *Mental Retardation.* Mental retardation is an important cause of delay in acquiring speech. Usually the delay in speech parallels the general retardation but frequently is greater than the rest of the retardation, and in my experience only rarely is speech ahead of the general development. Curiously, some mentally retarded children begin at 12 to 14 months to use a few words. They do so for several months and then stop talking, not to begin again un-

From the Department of Medicine, Children's Hospital of the East Bay, Oakland, and the Department of Pediatrics, Highland-Alameda County Hospital, Oakland.

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til months or years later. No explanation for this is available.[1] Parents of mentally retarded children often find the delay in speech the most unbearable part of the retardation. They feel that if the child could talk, he would be able to make rapid progress in other areas. Therefore, they often insist on speech therapy. The physician can be of great help to the parents by explaining that speech development in their child is largely a maturational process that cannot be accelerated.

3. *Faulty Innervation of the Speech Organs.* This commonly occurs in conditions where there is bilateral damage to cerebral motor centers. The cerebral spastic exemplifies this. Here again, acquisition of speech is largely a matter of maturation. In these cases, other bulbar impairments usually are obvious.

4. *Aphasia.* The whole matter of aphasia is difficult and is subject to much disagreement. The term *aphasia* is applied to disorders of symbol formation or comprehension in the absence of mental deficiency, motor disturbance or special sense impairment. Presumably, damage of the highest centers is involved, but precise localization is not always possible. The terms *word deafness, impressive (or receptive) aphasia, auditory aphasia* and *sensory aphasia* refer to a specific inability to understand the spoken word. A child with auditory aphasia may develop a language of his own, termed *idioglossia* or *idiolalia.* The terms *expressive aphasia* or *motor aphasia* refer to an inability to create speech, or at least meaningful speech, even though comprehension of language is intact. Although the two entities may occur separately, there frequently is some combination of the two. Diagnosis of aphasia is notably difficult in early childhood because there are no certain landmarks. Contrary to statements found in textbooks, neurological examination, electroencephalography, behavior patterns, use or non-use of gestures, and psychologic tests do not infallibly identify the aphasic child. It is easily understood why these children are frequently regarded in turn as deaf, mentally retarded and emotionally disturbed. A valuable clue to the diagnosis of auditory aphasia comes when a presumably deaf child of good intelligence fails to make progress in a training program for deaf children.[4]

5. *Autism.* Since Kanner[2] described this condition in 1943, it has been recognized with increasing frequency. Autistic behavior occurs in association with a wide variety of organic and emotional disturbances. Primary autism, that is, autism without known cause, is symptomatic in earliest infancy. The infant is not cuddly, and it soon becomes apparent that he is unable to relate to people and situations in the ordinary way, but he does relate well to objects and is bright in appearance. The autistic child has "an obsessive desire for maintenance of sameness,"[2] and fiercely resists external forces to change him. One of the striking features of autism is mutism. When language does develop, it often fails to convey meaning to others. These children live in a world of their own, and others are not permitted to enter into it. Although it is not always possible to make a positive diagnosis easily, the condition need not be considered in a warm, friendly, affectionate child who relates well to his parents.

6. *A Family Trait.* It appears to be true that delayed onset of speech may occur as a family characteristic, especially in male members. In this situation, ultimate normality is the rule. One should be hesitant in accepting this as an explanation, since parents who are seeking a benign diagnosis may unconsciously misrepresent the family history, and this may lead to regrettable delay in establishing a correct diagnosis.

7. *Hospitalism.* Severe speech delay may occur in children who have spent a large part of their early lives in hospitals or institutions in connection with severe and prolonged illness, abandonment or being orphaned. The commendable trend of institutions toward providing stimulation for these unfortunate children should diminish the incidence. A similar problem arises in a home where the child is left alone and systematically ignored, aside from feeding.

8. *Parental Overprotection or Coercion.* There are some neurotic parents whose actions are such that the child is delayed in doing all things for himself, including communicating. There are two types of parents whose actions and attitudes will inhibit speech development in some children. The first are those parents who overprotect their children, who discourage independence and spontaneity in their children, and who do not permit their children to do anything for themselves. The second are those parents, usually highly successful in their occupations, who either wish their children to be prodigies or who cannot bear the long period of immaturity, and who therefore force, push and coerce their children to an impossible degree. Some children appear to shrink from coercive parents by "voluntary silence" or "elective mutism." In these situations, speech delay is only one of the problems, and often not the most significant. Since emotional problems in parents and child inevitably arise when speech is delayed due to any cause, one must be unusually careful not to ascribe causality to an emotional disturbance that may be a result of the speech delay.

Although it is not difficult to find uncomplicated examples of any of the conditions discussed, it is frequently true that multiple causes are present in any given case of speech retardation. Thus, a combination of mild mental deficiency and some deafness is common, giving more speech delay than could be accounted for by either alone. Similarly, a child with organic brain disease often has impairments of a variety of functions involved in speech.

What should be the approach of the physician when he is consulted about speech delay? The family physician or pediatrician may already have information about the child and the parents which will help him decide on a course of action. If one sees the child as a new patient, an exquisitely detailed history is necessary, including questions about the development and present state of the child's vocalization. Since the parents often are unable to describe the child and his speech accurately, it is risky to venture an opinion unless one has an opportunity to observe and hear the child. Observation of the child with his parents often will provide important clues to diagnosis. If the physician cannot decide whether or not a speech problem exists, referral to a speech pathologist is in order. The speech pathologist can determine whether or not a problem exists, and if one does exist he can tell something of its nature and he may be able to suggest some further investigations that are indicated.

Delay in acquisition of speech produces severe parental anxiety and frustration. The frustration is increased by the many incorrect diagnoses that are usually applied to the child. The physician should avoid hasty commitment to any diagnosis, avoid assigning the speech delay to trivial causes, and avoid bland reassurances. Each case needs detailed, individualized study. This study should include, as indicated, an appraisal of the general health, neurologic function, hearing, intelligence, integrity of the speech organs and the emotional climate in which the child lives and has lived. Such a study will permit specific diagnosis which will carry with it implications for treatment and prognosis. Often it may be necessary to study the child over a considerable period before a final diagnosis can be made. The child's response or lack of response to a treatment program—such as a class for the deaf or a special nursery school—may aid in the diagnostic formulation. Unfortunately, parents frequently withhold important information in the early stages of the investigation. The physician should advise the family that the necessary studies will be time-consuming, and he should be prepared to direct the family to the proper facilities and agencies. For an effective diagnostic study, coordination of the efforts of the various specialists is essential, and there must be free communication among the specialists.

2615 Ashby Avenue, Berkeley 5.

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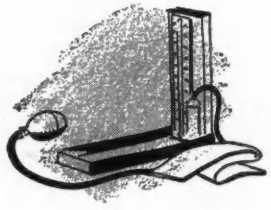

Diagnosis of Deafness in Preschool Children

GEORGE W. OLSON, M.D., Fresno

• **Hearing and speech disorders in children are often not due to actual defects in the ear or speech organs. Supposed loss of hearing and speech can occur in children who hear well but who cannot identify the words, understand their meaning or express them because of damage to certain brain centers and nerve pathways in conditions called aphasia, psychic disorders and mental deficiency.**

The child uses his special senses (hearing, sight, touch, feel and smell) to establish contact with his environment and of these senses, hearing is most important because it helps to build the best avenue of communication with his immediate world.

As the deafened child can usually be helped by treatment, it is necessary to make a correct diagnosis early in order that the proper measures may be instituted in the first five years of life.

THERE ARE SEVERAL clinical entities that cause hearing and speech disorders in children, and the treatment differs for each. As the proper remedial treatment in the formative years can mean much for a child's social and economic future, it is a physician's duty to make a correct diagnosis early.

The terms *hearing* and *deafness* are used in their functional sense in this communication. This means that normal hearing consists not only of an auditory stimulus passing from the peripheral ear to the area 41 in the brain, but also of its transmission to higher perceptive and psychologic stations where the sound is put to its destined purpose. In these interpretive centers the sound is memorized and stored for future symbolic use and is then passed on in its proper context for expression by the motor center for speech. The term *deafness* refers to a decrease in hearing function which may vary from slight to a total loss.

Diagnosing deafness in a preschool child is fraught with difficulties, not the least of which is determining whether the deafness is due to an auditory cause, to brain damage or to psychologic aberration. Often the child cannot be examined satisfactorily by pure tone or speech audiometry, and the other formal diagnostic procedures such as peep show tests, electroencephalography and psychogalvanic skin reaction studies require equipment and personnel not usually available.[1,2,5,6] Most of these procedures have their greatest value in estimating quantitative loss of hearing rather than in helping to make a differential diagnosis. Without formal hearing tests, the examiner must rely on the history and a careful observation of the child's behavior in relation to his environment.

It is necessary to keep in mind the normal growth of a child with regard to his mental, physical, social and emotional development so that this standard may be compared with the behavioral characteristics of children with hearing disorders.[7] The normal-hearing baby can be informally tested by simple procedures and serial observations as to how he reacts to sounds, words and gestures.[9] Ten to 30 days after birth, a sharp tone near the baby will usually evoke an auropalpebral reflex. After approximately six weeks of life the baby will stop voluntary movements of head, arms and legs when he hears a fairly loud noise. At from two to four months of age, infants begin turning the head toward the source of sound. Somewhat later there will be cooing, laughing and smiling, and the cry and jargon will have definite tonal inflections. Still later there will be gradual assimilation of ability to integrate sounds and gestures—enough so that adults can interpret their meaning—and at the same time the infant becomes increasingly aware of his environment. Simple single words normally are uttered at from 12 to 14 months of age, and by the 18th to 22nd month the child should be using sentences. The chronological succession of events just noted in the development of the normal baby depends upon unimpeded passage of the auditory stimuli through the multiple brain centers dealing with memory, symbolization and expression.

In this development process, the auditory messages are also integrated with those from other special senses to form a scaffold for the construction of language. The building blocks for language are (1) perception, (2) assimilation and interpretation, and (3) expression in correct context of sounds, words and gestures.[8] When language function is delayed or hampered for any reason, the child will have difficulty in communicating with his environment; and as a consequence his mental, social and behavioral development will be retarded and changed.

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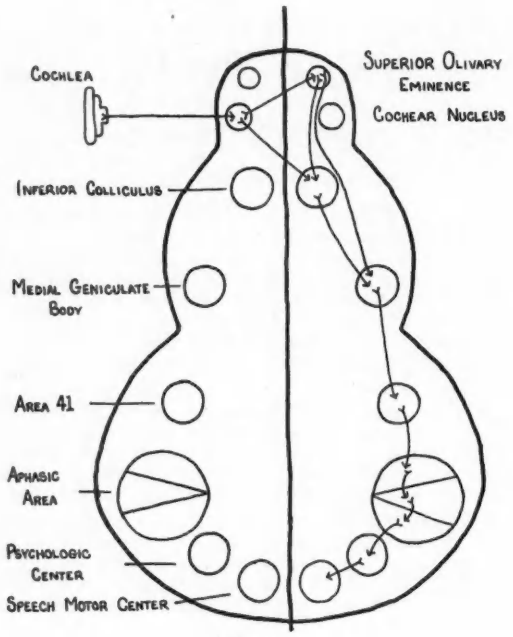

Figure 1

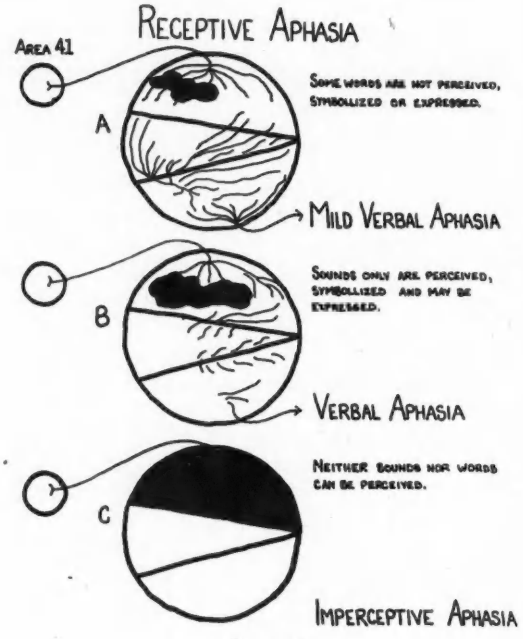

Figure 2

It is known that lack of language may be caused by many clinical entities. The following conditions have been found to comprise the majority of the hearing and speech disorders in children:

Peripheral Deafness. The causes are well known and discussion here is unnecessary.

Intermediate Deafness. Deafness due to lesions in the auditory pathway from the cochlear nucleus to the contralateral area 41 in the temporal lobe has been termed *intermediate deafness* (see Figure 1). This pathway is known to be vulnerable to trauma, as in birth injuries, and to lesions produced by intravascular hemolysis in Rh factor incompatibilities.[3,4] It seems that a more specific localization of the site of disease can be expressed by the term *intermediate deafness* rather than *central deafness*, a prevalent term. Use of the term *central deafness* should be limited for those cases with bilateral lesions in the areas 41.

Aphasia is a language disorder resulting from brain damage and it is characterized by poor symbolic behavior and psychologic aberrations. It may be mild or severe and there are different patterns of behavior dependent on how localized or extensive be the brain deterioration. When the auditory stimulus reaches area 41 in the temporal lobe, it is then transmitted to higher centers in the brain for more definitive interpretation. Normally the stimulus is processed in a receiving station (perception), then sent on to an integration center for memory and thinking to himself (symbolization) and finally reaches the expressive center where words or symbols are gathered together and transmitted in the correct context to the motor center for speech. In discussing the several types of aphasia it will be of help to consider several schematic drawings (Figures 2, 3 and 4).

Receptive auditory aphasia occurs when brain damage involves the perceiving center for sounds and words. If the damaged area be small and localized (Figure 2A) there will be minor impairment. Should the deterioration be greater, no words would be perceived (Figure 2B). When the damage is still more extensive, neither words nor sounds could be understood (Figure 2C). This is classed as *imperceptive auditory aphasia.* Children with receptive aphasia are unable to form language because they are confused as to the meaning of the sounds and words that they hear. They cannot segregate and focus attention on the words and sounds which should be of immediate importance to them. This confusion results in the child's speaking seldom, not using his voice purposefully, having a meaningless jargon and responding sluggishly to other sensory stimuli. Their social development is characterized by their inadequacy in playing with others and a lack of enthusiasm for the world in general, being neither shy nor aggressive. These children are easily distracted, are uninhibited and often persist in doing meaningless acts over and

over. Motor development is usually retarded and their coordination is poor.

Central auditory aphasia is produced when brain damage involves the central areas as shown in Figure 3A. Clinically a pure central aphasia is seldom found because the brain damage usually extends to the areas A and B. If brain deterioration is extensive in the central area, the characteristics of both receptive and expressive aphasia are found: The child fails to symbolize the words and sounds he has perceived, and as a result he is unable to think to himself. This acts as a severe retardant to development of language and as a group the children with this condition are the most retarded in social, behavioral and mental growth.

Expressive auditory aphasia occurs when a lesion damages the area shown in Figure 3B. The child is able to perceive and to symbolize internally but is unable to express the words in their correct context. As a group, children with such damage have milder emotional and social deviations from normal than the other aphasias because they are able to understand speech and to think to themselves, and are only handicapped by the inability to communicate by voice.

Psychogenic deafness is thought to be due to a defect in the brain area dealing with communications between the child and his environment. This region has not been localized anatomically but it is thought to be near the other cerebral centers (Figure 4). Because of emotional disturbances between the child's inner needs and the demands of his world, an impasse may develop in which he is unable to satisfy either. The children in this group have decided to give up their environment. The sense of hearing seems to be the more common link in communication with his environment to be abandoned, although visual stimuli may also be ignored. With the relinquishment of the sense of hearing the child becomes severely handicapped because of poor language foundation. Psychic deafness is thought to be generally defensive in nature and it is now recognized that a feeling of insecurity may be engendered by a lack of love and too frequent admonitions and punishments—the latter being significantly associated with the spoken voice. The auditory stimulus moves normally through the peripheral tracts to the higher cerebral centers where perception, internalization and expression are integrated. There is normal perception, internalization and the knowledge of how to express words. However, when the relay passes into the psychologic center the message is halted and does not go through to the motor center for the speech organs. This results in the suppression of speech which in turn causes deterioration in the child's general behavior with relation to his environment.

Infantile autism is known as a form of schizophrenia which develops in early infancy. Because of the psychic block, functional hearing and speech are not acquired and the baby's maturational growth is retarded. These children respond poorly to formal hearing tests and are often classed as being peripherally deaf. It has been noted that a large number of these babies are emotionally starved from lack of love and understanding. Unless the psychic barrier be removed, the child will never talk.

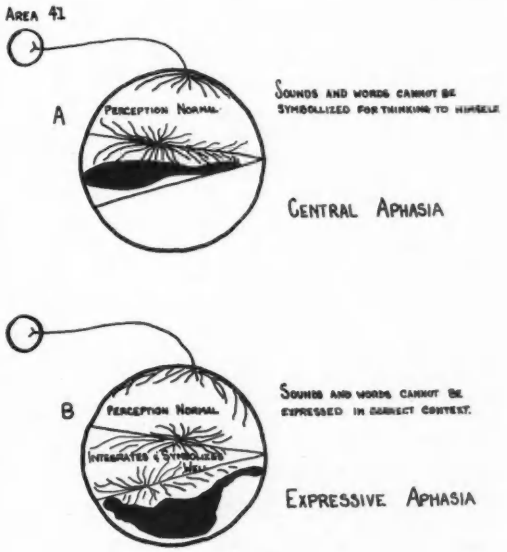

Figure 3

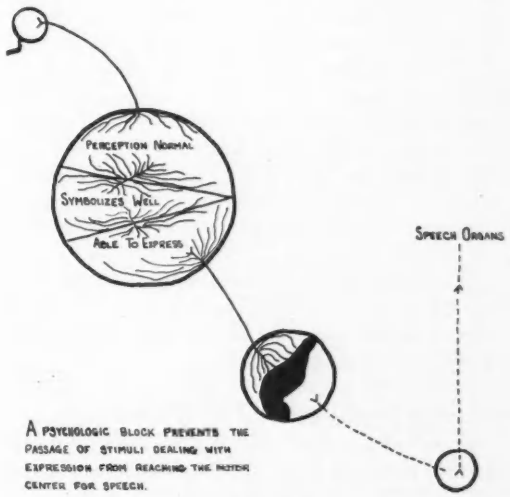
PERCEPTION NORMAL
SYMBOLIZES WELL
ABLE TO EXPRESS
SPEECH ORGANS
A PSYCHOLOGIC BLOCK PREVENTS THE PASSAGE OF STIMULI DEALING WITH EXPRESSION FROM REACHING THE MOTOR CENTER FOR SPEECH.

Figure 4

CHART 1.—*Points to Cover in History-Taking for Diagnosis of Childhood Deafness*

PRENATAL:

German measles?
Miscarriages, abortions or stillbirths?
Unusual drugs during pregnancy?
Accidents during pregnancy?
Sickness during pregnancy?
Length of pregnancy?

NATAL:

Did labor begin normally or were drugs given?
Was it difficult or long labor?
Were forceps used?
Was anesthesia given?

POSTNATAL:

Was baby's skin yellow?
Was baby's skin blue?
Did baby have trouble nursing?
What sicknesses has baby had?
Has baby had high fevers? How high?
Has baby had convulsions?
Has baby had skull injuries? Been "knocked out"?
What medicines has baby had?

FAMILY HISTORY:

Any deafness in either mother's or father's family?
Any deafness or no talking in baby's brothers or sisters?
Any convulsions in family?
Any mental disease in family?

BABY'S GROWTH:

1. When did baby first "hear" anything?
2. When did baby sit up alone?
3. When did baby creep?
4. When did baby stand alone?
5. When did baby walk?
6. When did child first talk?
7. Does child walk and run well?
8. Is child more awkward than other children?
9. When did child use sentences?
10. When was child toilet trained?
11. Does child play well with other children?

Schizophrenia usually is manifested after a year and a half to two years of age. Up to this point the child develops fairly normally in most respects and speech has been acquired before the psychic block occurred. In most cases one can elicit a history of pronounced fear of sounds from infancy. The child seems withdrawn from reality and exhibits bizarre relations with his environment. Even though he rejects sounds objectively, he does use them subjectively for his own amusement in phantasy form. It is characteristic that these children are the most mute of all, yet their motor development is nearly normal.

Obsession and anxiety neuroses are conditions in which hearing is relinquished only for certain situations. Generally speaking, children with psychic disorders of hearing will talk less, use and respond to gestures less and react to other stimuli less than will those with the other hearing disorders.

Mental deficiency may be confused with peripheral deafness, especially in children having an intelligence quotient from 45 to 65. In the case of lower intelligence quotient the motor, physical and behavioral characteristics are such that mental retardation is suspected and the apparent hearing loss can be accounted for. Many of these children in the 45 to 65 intelligence quotient bracket are being treated for auditory deafness. If their general inadequacy in most situations is recognized, then their slow speech development can be predicted. If the intelligence quotient is 50, then the child will have a mental age of one when he is two years old and his speech formation and other phases of development will take twice as long as the normal child.

CHART 2.—*Occurrence of Various Phenomena in Several Categories of Childhood Deafness*

Phenomenon	Peripheral Deafness	Aphasic Deafness	Psychic Deafness	Mental Deficiency
Hears loud sounds usually	X	....	....	X
Hears loud sounds now and then	....	X	X	....
Hears sounds but not speech	....	....	X	....
Doesn't want to hear	....	....	X	....
Afraid of loud sounds	....	....	X	....
Confused by words and sounds	....	X	....	X
Uses what hearing he has to his advantage	X	....	....	X
Doesn't use hearing to his advantage	....	X	X	....
Listens well	X	....	....	....
Listens poorly	....	X	X	....
Does he talk some?	X	X	....	X
No speech	....	....	X	....
Talked and then stopped talking?	X	....	X	....
Talking delayed after 2 years	....	....	....	X
Uses voice to call people or make them notice him	X	....	....	X
Voice tones are normal tones	....	X	X	X
Voice tones are not normal tones	X	....	....	....
Voice used in playing	....	X	....	X
Voice not used in playing	X	....	X	....
Uses and understands gestures and facial expressions	X	....	....	X
Doesn't use or understand gestures	....	X	X	....
Does he use eyes well and sense of touch?	X	....	....	....
Poor use of eyes and sense of touch	....	X	X	X
Sit, creep, walk, run, etc., normal	X	....	X	....
Awkward or poor movements	....	X	....	X
Is active and accomplishes things	X	....	....	....
Is active and doesn't accomplish much	....	X	....	X
Shuffles and balance is unsteady	X	....	....	....
Coordination is good	X	....	X	....
Coordination poor	....	X	....	X
Laugh and cry have "flat" tones	X	....	....	....
Laughs and cries without reason	....	....	X	....
Doesn't laugh or cry very loud or easily	X	X	....	X
Laugh and smile to themselves only	....	....	X	....
Does things over and over again	....	X	....	....
Doesn't do anything for very long	....	X	....	....
Easily disturbed	....	X	....	....
Likes people around him	X	....	....	X
Doesn't care if people are around	....	X	X	....
Temper tantrums	....	X	X	....
Dislikes loving and cuddling	....	....	X	....
Doesn't play well with other children	....	X	....	....
Gets along well with people	X	....	....	X
Doesn't care for other people	....	X	X	....

(X) Indicates Conditions in Which Abnormality Occurs

Other conditions resulting in impaired speech are *dysarthria* and *anarthria*. The site of pathologic change is the motor speech center and therefore the speech impairment is from motor deprivation rather than sensory loss as in aphasia. The speech center lesion is caused by brain deterioration which often is associated with aphasia, mental deficiency and birth injuries. In addition to the speech impairment there is a dysfunction of chewing and swallowing, these being allied functions of the speech muscles. This deglutitory deficiency serves to differentiate dysarthria from expressive auditory aphasia, which has no motor disturbance.

It is of considerable help in the taking of a history and in the observation of the child's behavior to have a planned approach. Use of the forms shown in Charts 1 and 2 has proven of value in avoiding the possibility of failing to ask necessary leading questions. When the results are tabulated a clearer insight often can be gained and further definitive questions can be asked to aid in making a correct differential diagnosis.

1759 Fulton Street, Fresno 21 (Olson).

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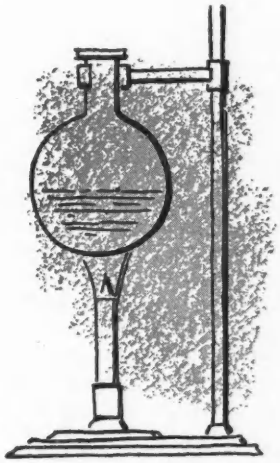

The Language-Handicapped Child

Coordinated Evaluation by Physicians and Educators

W. J. WEDELL, *M.D.*, E. A. LOWN, *M.A.*, and RUSS CONNOR, *M.A.*, San Francisco

• **Seventy children were studied during 1959 in a special school program because of major language problems. A team of medical and educational personnel studied each child during a ten-day school enrollment. The results of the medical and educational studies were of great value in establishing the correct diagnosis and devising a suitable educational program for the children.**

SINCE SEPTEMBER 1946, the School for Cerebral Palsied Children, Northern California, has been operating as a part of the Bureau of Special Education of the California State Department of Education. During its first ten years of operation, several members of the staff had the opportunity to study and deal with the various speech and language problems of the cerebral palsied children. In the early years of the School program, most children were admitted because of the extent or degree of their physical handicap and it was felt that an intensive program for a few months would significantly accelerate their physical or educational habilitation.

In the past few years numerous excellent classroom programs for children with cerebral palsy and other similar handicaps have been developed throughout the state. There are currently 56 special programs, which are operated by the local school districts, for approximately 3,000 children. Although these new programs are doing a very commendable job, they often seek help, especially for the children with mild physical problems but with major problems relating to speech, language and learning. The children who also have multiple handicaps involving vision and hearing require special studies and care.

In response to many requests for help with complicated language problems, the School started a pilot project of speech and language disorders in September 1956. The children with language problems were enrolled in one of the classrooms and, after the initial diagnostic studies, selected children were enrolled for extended training in speech and language. In the following two years, 93 children were studied and special recommendations were made.

In January 1959, the Residence School was approved as a center for the diagnosis of neurologically handicapped children under the Crippled Children Services of the State Department of Public Health. During the year 1959, seventy additional children were studied at the School because of neurological and language problems. This communication is a review of the current method of operation of the language program and some of the medical and educational problems presented by the language-handicapped child.

Philosophy of a Medical-Educational Team

In the diagnosis and treatment of language disorders in children, it is obvious that a multiprofessional approach is advisable. The different hearing, speech and language centers throughout the country have widely different standards for the diagnostic team, particularly for the medical aspects of the problem. In some language centers, only one physician is on the team while other centers may have two or three physicians see the children. In our program, the early medical team consisted of a pediatrician and a neurologist. It soon became evident that additional medical evaluation was necessary for almost every child with a significant language problem. Consequently, an ophthalmologist, an otolaryngologist and a child psychiatrist were added to complete the medical team. The educational members of the team consist of a qualified audiologist and speech therapist, a psychologist, a medical social worker and a teacher experienced in elementary school education as well as in special education. Our experience with children with language handicaps indicates that an integrated medical and educational diagnostic study is essential in order to establish the likely diagnosis and to make an intelligent and realistic recommendation for the child.

From the Diagnostic Center for Neurologically Handicapped Children, Bureau of Crippled Children Services of the California State Department of Public Health and the Medical-Educational Diagnostic Center, School for Cerebral Palsied Children, Northern California, San Francisco 27.

Neurological Consultant and Coordinator, Associate Research Neurologist, University of California School of Medicine (Wedell); Superintendent, School for Cerebral Palsied Children, Northern California, San Francisco 27 (Lown).

Presented before the Section on Psychiatry and Neurology at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

Method of Study

The children with major language problems were first evaluated by their local physician or pediatrician. Those whose primary problem seemed to be mental retardation or epilepsy were not accepted for extensive study. The children whose language disorder seemed referable to a neurological disorder were subsequently enrolled in the School for Cerebral Palsied Children for more complete evaluation. Previous medical studies and hospital reports were obtained whenever possible to avoid reduplication of studies. The evaluation of the medical and educational problems is conducted during a two-week period of school enrollment. During the first week, the child is in the classroom except for the time involved in the various medical examinations and laboratory tests. During the second week, the additional studies regarding education, psychology and language are completed. After ten days, a staff conference reviews the pertinent medical and educational findings with representatives of the local health and educational facilities as well as with the parents. The goal is to find the most appropriate program for the child for the forseeable future of one to two years.

Results

The 70 children dealt with during the past year had the most extensive studies and will therefore be reported upon. In the previous group of 93 children, however, although the clinical observations were the same, some of the special consultations and laboratory tests such as x-ray or electroencephalographic examinations were not done.

Source of Referrals

Only two of the children examined were from San Francisco since the School's facilities are primarily for children from smaller communities where extensive medical facilities are lacking. Most of the children were from the eight counties surrounding San Francisco Bay, although several children were from the smaller communities in the San Joaquin and Sacramento valleys.

The children ranged in age from 3½ to 15 years. Thirty-nine of them were from 3½ to 6, 22 from 6½ to 9, and 9 children from 9½ to 15 years of age. The children in the youngest group were referred primarily through medical channels, the oldest group primarily through educational channels. The numbers of children of various ages are shown in Table 1.

TABLE 1.—*Number of Children of Various Age Groups in Present Study*

Age (Years)	No.	Age (Years)	No.	Age (Years)	No.
3½	3	6½	5	9½	1
4	4	7	4	10	0
4½	7	7½	3	10½	2
5	5	8	4	11	1
5½	11	8½	1	11½	0
6	9	9	5	12	0
	—		—	12½	1
	39		22	13	0
				13½	2
				14	1
				14½	0
				15	1
					—
					9

Neurological Findings

Although the children were seen primarily for language problems, three of the children had very gross neurological impairment such as hemiplegia or spastic paraplegia. Nine of the children also had mild but obvious neurological involvement of the neuromuscular system such as mild hemiplegia. The most interesting finding in the children was not the obvious gross neurological deficit but the nonspecific awkward and clumsy coordination problem which was evident in the hands as well as in the lower extremities.

Neurological examination of the cranial nerves was at times difficult in these children with little or no speech, and they were at times uncooperative. Simple modifications of the routine examination would often give extremely valuable information. Visual acuity could be adequately evaluated by the use of various sizes of colored candy beads. These varied in size from 1 mm. up to the larger pieces—discs about 1 cm. in diameter. The sight of the candy quickly activated the eye-hand-mouth pattern which gave the opportunity to also evaluate ataxia and other coordination problems. The use of small finger puppets was most satisfactory in evaluating visual field defects or hemianopsias. Evaluating the degree of dysarthria was difficult in the children, particularly in the youngest group. In the older children, articulation could be more adequately evaluated with the longer words, connected speech and finally test phrases for articulatory disorders. Observation of the child for drooling, for tongue control and for ability to lateralize the tongue also gave information regarding speech.

The motor system in the children without gross neurological findings was extremely interesting. The parents, school teachers and other observers almost invariably noted the awkward, clumsy problem regarding the fingers. These findings were very evident with the handwork in the School program even as low as the nursery school level. It was more evident in the kindergarten and first grade hand activities. The finger coordination problem could be demonstrated and the evidence reinforced by the

standard tests of performing finger-to-finger coordination. The lower extremities could best be evaluated not only by watching the gait but by having the child run. It was also of interest to observe the child climbing and descending a flight of stairs and the large number that still required the hand railing for support or would not alternate their feet in the usual manner.

In most of the children pathological reflexes were demonstrated. There was often a gross inequality of the reflexes. A very high number of children obviously had a positive Babinski reflex. A surprisingly large number also had grasping reflexes or positive Wartenberg reflexes in the upper extremities.

Sensory examination was sometimes difficult in the children, particularly the young group. However, often one hand was larger than the other, with a problem of astereognosis involving the small hand.

The consulting ophthalmologist examined 52 children. Significant abnormalities other than refractive errors were present in 18 of them. Extensive hearing studies were done in all children. One was deaf, with a hearing loss so severe that he was not expected to develop language even with amplification. Nine of the children had significant hearing losses but could hear adequately with the use of amplification.

Electroencephalographic studies were performed on 60 children. There were 33 obviously abnormal records, most of them indicating generalized paroxysmal dysrhythmia. Several of the records also showed focal disorders. Four of the 60 children were so uncooperative that records could not be obtained in spite of the use of medication.

Other laboratory studies which gave significant information included x-ray films of the wrist for bone development, which revealed major retardation in five children. One of the children had clinical manifestations of phenylketonuria, which was confirmed by urine and blood studies for phenylalanine.

Psychological studies were done on all children. A battery of studies was performed, including the Wechsler Intelligence Scale for Children, Columbia Mental Maturity Scale and the Ammons Full Range Picture Vocabulary Test. Other studies were the Goodenough Draw-A-Man, the Ravens Progressive Matrices and the Bender-Gestalt. The range in mental ability is shown in Table 2.

All children and at least one parent were seen by the child psychiatrist. Most of the children had problems of behavior, as well as of speech and language, and had aroused considerable anxiety, confusion and uncertainty in the parents. The psychiatrist was helpful in differentiating the primary emotional problems from those that were secondary to the organic clinical condition. Of the 70 children, it was felt that only 3 or 4 had severe primary emotional problems.

TABLE 2.—*Mental Ability of Children in Present Study

Total number studies	70
Very superior	0
Superior	1
Bright normal	4
Average	9
Dull normal	12
Borderline	12
Below borderline	32
Total number diagnosed as having an aphasic problem	28
Expressive type	4
Receptive type	0
Mixed	23
Undetermined	1

*Made on basis of Wechsler Intelligence Scale for Children ratings.

Recommendations

After the diagnostic studies were completed, recommendations were made depending upon the age of the child and the entire clinical picture. Several children were referred to special classes for children with hearing problems where special help was available. A considerable number were in classes for slow learners or for the mildly retarded. A few of the children continued in regular classroom programs with additional help and speech therapy. Six of the children were able to attend a special class for language-handicapped children which was activated in September 1959 in the Berkeley school system.

Department of Neurology, University of California Medical Center, San Francisco 22 (Wedell).

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CASE REPORTS

Isolated Paralysis of Serratus Anterior Due to an Electrical Injury

LEONARD MARMOR, *M.D.*, and
CHARLES O. BECHTOL, *M.D.*, Los Angeles

THERE HAVE BEEN about 250 cases of isolated paralysis of the serratus anterior muscle reported since the first description in 1837 by Velpeau. Johnson and Kendall[1] said that 35 of the 111 cases reported since 1925 were attributed to acute trauma, 16 to recurrent trauma, 13 to postinfectious conditions, 13 to cold, eight to injections, seven to postoperative complications, and six were postpartum. In 13 cases the cause was not determined. There has been no report of nerve paralysis due to an electrical injury.

The nerve to the anterior serratus arises from the anterior spinal branches of cervical roots 5, 6 and 7, and traverses the axilla beneath the brachial plexus to the lateral aspect of the chest wall. It is difficult to understand the frequent selective injury to this nerve.

In the case here reported, there was selective paralysis of the long thoracic nerve to the serratus anterior, secondary to an electrical injury.

REPORT OF A CASE

A 50-year-old carpenter was injured at work on October 24, 1958, when he was unable to release his grip on an electric drill that short-circuited while he was holding it in his right hand and 110 volts of electricity passed through his arm for about 30 to 60 seconds. Immediately after the injury the patient was unable to raise his arm to wash his face. Shortly thereafter pain developed in his shoulder, and his hand began to swell. Several months of physiotherapy to restore the strength of the right arm was futile. The arm tired very rapidly and the patient could not hold it above his head without great difficulty and weakness.

Upon examination, decided "winging" of the right scapula was observed and the appearance was suggestive of atrophy of the infra and supra spinatus muscles (Figure 1). The range of shoulder motion was not restricted. Loss of sensitivity to pin-prick and to light touch was noted in the arm. Roentgenograms of the shoulder girdle were within normal limits. An electromyogram showed fibrillation indicative of denervation involving only the serratus anterior muscle. The patient had difficulty lifting a one-pound weight through the active range of motion. There was no return of muscle function in

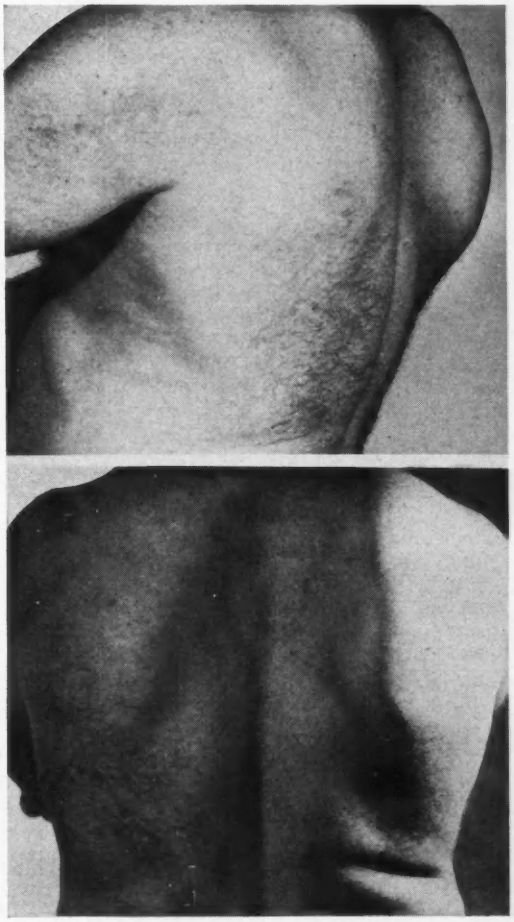

Figure 1.—Winging of right scapula in a case of paralysis of the serratus anterior.

From the Department of Surgery, Division of Orthopedic Surgery, University of California Medical Center, Los Angeles 24.
Submitted July 26, 1960.

the succeeding nine months and the patient continued to be disabled for manual labor.

SUMMARY

Isolated paralysis of the serratus anterior muscle occurred in a patient following electrical shock from a 110-volt drill he was holding in his right hand and could not release when the current passed through his body.

Department of Surgery, UCLA Medical Center, Los Angeles 24 (Marmor).

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A Perineo-Abdominal Approach for Resection of a Presacral Tumor

NORMAN M. SHAPIRO, M.D., LEONARD D. ROSENMAN, M.D., and LEWIS SPECKER, M.D., San Francisco

THIS CLINICAL REPORT will illustrate and discuss two aspects of the treatment of a tumor in the presacral region: (1) A combined perineal and abdominal operation exposed most of the tumor and allowed the surgeon to resect it with its investing condensations of soft tissue, all the while maintaining precise hemostasis. (2) In this patient, resection of the right third, fourth, and fifth, and the left fourth and fifth sacral nerves caused no defects of reproductive function, micturition or defecation.

Adequate data and discussion concerning the incidence, the distribution and the histopathologic features of presacral tumors are already a part of the literature.[3,6,8] Several investigators reported successful resections by perineal and transsacral routes.[1,4,7] However, the combined abdominoperineal operation[2] has received much less attention. In the present case the tumor arose in the sacral neural canal and extended anteriorly to form a large mass behind and alongside the rectum. The tumor was supplied by several large arteries and drained by large veins belonging to the internal iliac system, which entered the mass on its cephalic and ventral surfaces. We feared that a resection attempted through a perineal route alone would cause hemorrhage difficult to control. On the other hand, an abdominal operation alone would not have permitted resection of that portion of the sacrum which was invaded by the tumor. In the combined perineo-abdominal operation, the surgeon exposed and removed as much of the sacrum as he considered necessary to rid it of tumor before he delivered the tumor into the presacral space. Then he removed the mass by careful abdominal dissection of all of its surfaces rather than by enucleating it from within its own outer layers.

Neuro-anatomic evidence suggests that sacrifice of certain segments of the pudendal plexus, formed by the anterior branches of the first through the fifth sacral nerves, will lead to loss of visceromotor functions. The visceral branches lie more in the third and fourth than in the second segments, and they include visceral afferent and preganglionic—that is, parasympathetic efferent—fibers. They participate with fibers from the hypogastric plexus and with visceral branches of the sacral chain ganglia in the formation of the pelvic plexus which distributes to the various pelvic organs. However, MacCarty and coworkers[6] and Mixter and Mixter[5] showed that, contrary to the fears of the anatomists, resection of the third, fourth and fifth sacral nerves bilaterally led to no observable dysfunction. Our experience corroborates that report.

From the Departments of General and Orthopedic Surgery, Mount Zion Hospital and Medical Center, San Francisco.

Submitted January 4, 1961.

REPORT OF A CASE

The patient, a 28-year-old white man, had no symptoms referable to the tumor. He fell while at work and sought medical attention because he had pain in the back. A defect in the sacrum was noted in roentgenograms taken to determine the presence or absence of fractures (Figure 1). Upon examination a large, round, nontender, rubbery-firm mass was felt through the rectum in the presacral region. For biopsy, the tumor was exposed through a small

Figure 1.—Preoperative roentgenogram showing destruction of sacrum.

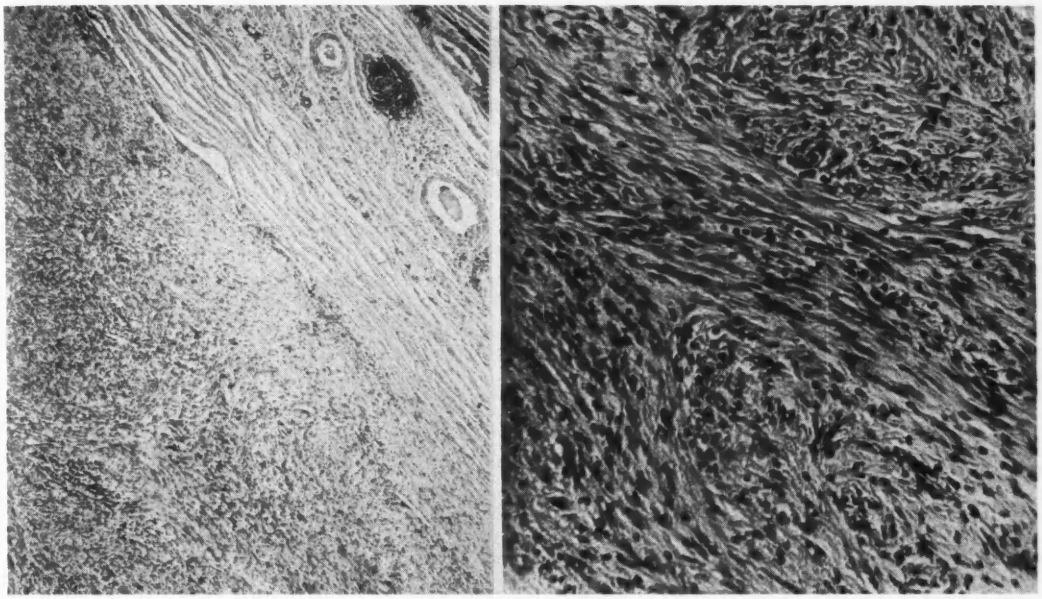

Figure 2.—Photomicrographs of specimen of lesion. *Left:* (×100), *Right:* (×400). Diagnosis: Locally destructive cellular neurofibrosarcoma.

incision over the right side of the posterior surface of the sacrum. A very thin layer of bone, representing the eroded roof of the neural canal, was elevated and a small portion of the tumor, which was fleshy, grey and vascular, was removed. The pathologist's diagnosis was neurofibroma. Subsequently, an operation for resection was performed. With the patient prone, a long right parasagittal incision was carried to the bone. By resecting the coccyx and reflecting the rectum, the surgeon exposed the presacral space. He transected the sacrum, crossing the third foramen on the right side, and divided the main trunks of the right third, fourth and fifth nerves, and the fourth and fifth on the left. The tumor was displaced entirely into the presacral space, drains and loose packing were inserted, and the incision was closed. The patient then was turned over and a lower midline incision was made in the abdomen. Retroperitoneal dissection beneath the pelvic floor delivered the tumor. A moderate amount of bleeding was controlled by ligation of the right internal iliac artery. The patient recovered promptly and was discharged from the hospital on the ninth postoperative day.

Pathologist's Report

The specimen was an oval mass approximately 10 cm. long and 7 cm. in diameter. One edge was irregular and contained several nerve trunks. Microscopically, the tumor was composed of columns of spindle-shaped cells. The cytoplasm was abundant and eosinophilic, and the nuclei were slightly irregular. Occasional cells were vacuolated. Mitosis was not readily found. A definite whorl pattern was present. Diagnosis: Locally destructive cellular neurofibroma. A low grade sarcomatous process cannot be excluded (see Figure 2).

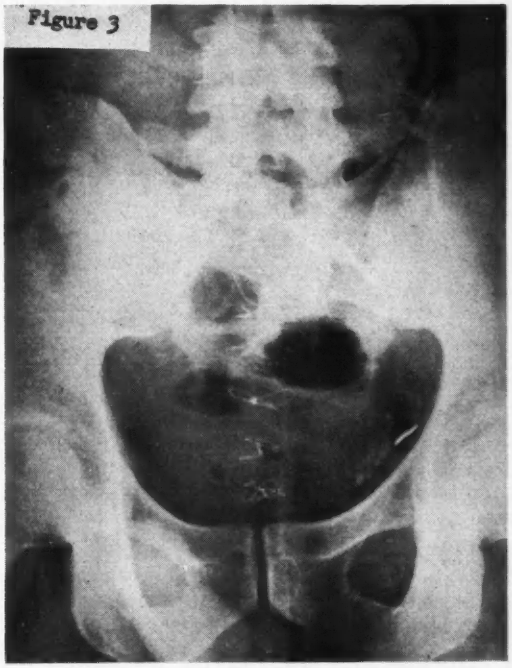

Figure 3.—Roentgenogram one year postoperative, showing residual defect of sacrum. Note: No enlargement right second sacral foramen.

When reexamined 12 months after the operation, the patient was well, without evidence of recurrence of disease, and without neurologic deficit other than some cutaneous numbness in a small zone in the saddle area. The sacral bony defect transmitted a cough impulse through soft tissues, but there was no hernial bulge. Figure 3 is a roentgenogram of the sacrum a year after the operation.

SUMMARY

A perineo-abdominal operation provided excellent exposure for a radical resection of a large tumor of the presacral region. The patient, a young man, had no visceral impairment after loss of five lower sacral nerves.

450 Sutter Street, San Francisco 8 (Shapiro).

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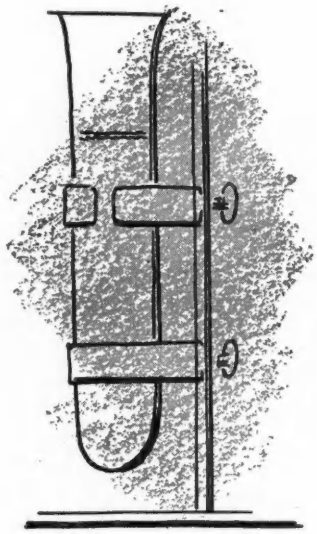

California MEDICINE

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EDITORIAL

A Plan of Our Own

PROXIMITY of the 1961 Annual Session of the California Medical Association brings to mind again that this occasion also marks a birthday for California Physicians' Service.

Twenty-two years ago, at the C.M.A. Annual Session of 1939, C.P.S. was activated. Formation of this plan, forerunner of a system of Blue Shield plans which now blankets the country, had been brought about by a vote of 101 to 4 in the House of Delegates of the California Medical Association in a special session in late 1938.

Preceding this action were studies which had started among physicians as early as 1917. A few physicians in the days of World War I were sensing a public demand for some method of prepaying the costs of medical services, some plan by which the unpredictable costs of medical care could be met through the predictable costs of a pooled fund.

These early studies culminated in the report in 1933 of the Committee on the Costs of Medical Care of which Dr. Ray Lyman Wilbur was chairman. Not much could be done about the problem at that time because the nation was in the midst of the depression, the A.M.A. was not in sympathy with the views of the majority of the Committee, and the idea of prepayment was a novel one.

In 1935, depression-bound physicians went so far as to propose to the State Legislature that a plan of state medicine be adopted in California. From our present position of hindsight, it is fortunate that industry, management, labor, agriculture and every other interest represented before the Legislature turned thumbs down on this proposal.

There followed the proposal of then Governor Culbert Olson in 1938 for a state system of medicine, a plan which was promptly vetoed by physicians and which failed in the Legislature. Parenthetically, it should be noted that the physicians who had advanced the 1935 medically-sponsored plan of state medicine were conspicuously absent from the 1936 House of Delegates. Their bid for glory failed on the legislative and home front alike.

Listing of these apparently unrelated but successive events gives ample evidence that the public desire to contribute to a fund for the payment of unpredictable medical care costs had not abated. The people of California, and of many other areas, wanted some means of providing for their costs of sickness. The California Medical Association recognized this desire and wisely figured that such a demand would and could be better met through medical rather than political leadership.

Studies by committees of the C.M.A. culminated in 1938 with the report of The Committee of Five, a hard working, hard hitting group of medical leaders possessed of foresight, skill and courage. They needed all three attributes in those days.

Their findings were translated into action in the 1939 special session of the House of Delegates, where, as noted, only four dissenting votes were cast on the proposal to create California Physicians' Service. At last, the doctors were in the business of providing their patients with a predictable method of meeting unpredictable costs.

This was the first statewide, medically-sponsored medical cost prepayment plan in the country. This was the start of a system which has now become a part of our lives and the lives of millions of patients throughout the country. California physicians may well be proud of their creation; others have paid tribute through emulation.

This recital would not be meaningful in a static organization. In California, however, nothing has been static for a good many years, including the C.M.A. The physician population in the state today includes a majority who came to California follow-

ing World War II, physicians of unquestioned professional skill but not aware of the economic struggles medicine has undergone here for the past two decades.

History has now caught up with California's pioneering in the field of medical care cost prepayment. Blue Shield plans cover the country. Commercial insurance carriers have entered this field in growing numbers and with billions of dollars of coverage provided. Closed-panel and other prepayment plans have been developed on the early philosophies and economic judgments of the Committee of Five.

At this point it is well to remember that not only have these philosophies prevailed and been proved true; the basic concepts of the organization of C.P.S. have also remained intact.

Today, in the welter of health insurance plans, C.P.S. stands out in California as the only plan which the physicians themselves control.

Each physician member of the California Medical Association has an effective voice in developing C.P.S. policies. Each county society member has a vote in selecting the Delegates from his society to the House of Delegates. Each Delegate, once the House is in session, has a vote on policy matters which control and direct C.P.S.

Where else can a physician make his voice heard in such sensitive areas? Surely not in a commercial insurance company. Surely not in a closed panel plan. These organizations operate under methods of their own choosing and the physician who provides the care for which the organizations pay the cost becomes nothing more than a service station where payment is made on the basis of the company's own meter.

In California Physicians' Service, policies must be made, of course, by a top administrative board which uses modern business methods to forecast success or failure of various changes or to evaluate experimental proposals. This board is, and must be, responsive to the expressed wishes of the House of Delegates. The real policy-making originates in the House.

How well this chain of command operates is demonstrated by the numerous changes made by C.P.S. in its twenty-two years of business existence. Its early experiments in complete coverage at a ridiculously low cost were abandoned when their results were shown to be substandard. Other programs were tried and dropped when the physicians in the House of Delegates made their wishes known. Experiments in a variety of plans have been tried, some with good results, some not good.

What this all adds up to is that C.P.S. constitutes a plan which physicians may and do govern. The Council of the California Medical Association appoints three of its own members each year to the C.P.S. Board of Trustees, and in addition all other nominees for places on the C.P.S. Board are submitted by the Council to the House of Delegates for confirmation. This is a plan which has flexibility, which can make pilot studies, which may change with changing professional and economic conditions. Nowhere else is this potential opened up to physicians.

In the 1961 House of Delegates there will doubtless be a number of resolutions asking that C.P.S. do this or not do this. All such resolutions will receive careful study and, if adopted, will be handed to the Board of Trustees of C.P.S. for implementation. Policy-making thus flows directly, and immediately, from the decisions reached by the physicians of the state.

The statement may be trite but the fact remains the fact: California Physicians' Service is our own plan. It is ours to direct, for the direct benefit of of our patients and for the indirect benefit of the public as a gauge and governor for all other prepayment plans. It is what we make it.

For the benefit of all concerned, let us hope that the House of Delegates will again recognize its authority and its responsibility and produce answers for C.P.S. which will benefit the public and therefore the medical profession.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Minutes of the 466th Meeting of the Council, Los Angeles, Biltmore Hotel, February 10-11, 1961.

The meeting was called to order by Chairman Sherman in Conference Room No. 1 of the Biltmore Hotel, Los Angeles, on Friday, February 10, 1961, at 4:00 p.m.

Roll Call:

Present were President-Elect Bostick, Speaker Doyle, Vice-Speaker Heron, Editor Wilbur, and Councilors MacLaggan, Wheeler, Todd, Quinn, O'Neill, Kirchner, Shaw, Rogers, Dalton, Murray, Davis, Miller, Sherman, Campbell, O'Connor, Morrison, Anderson and Teall. Absent for cause, President Foster and Secretary Hosmer.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Collins, Bowman, Marvin, Whelan, Klutch and Drs. Batchelder and Miller of C.M.A. staff; Howard Hassard, legal counsel; Eugene Salisbury of the Public Health League; county executives Scheuber of Alameda-Contra Costa, Lingerfelt of Fresno, Geisert and Smith of Kern, Field of Los Angeles, Somerville of Napa, Dochterman of Sacramento, Neick of San Francisco, Bailey of Tulare, Blankfort of Marin, Brown of Sonoma; Drs. Frank Malone, Thomas Elmendorf, William Hickey, Malcolm Watts and John Schaupp; Mr. Richard Philleo of the A.M.A.

1. *Riverside Plan:*

Councilor Wheeler gave a detailed report on the scope of activities and experience in Riverside County in the operation of a prepayment medical care program without fixed limits of professional compensation. Dr. John Morrison reported for California Physicians' Service that experience with this plan had been excellent and that the "Riverside Plan" was considered by C.P.S. to be a sound and productive field of experimentation in health insurance coverage.

2. *Medical Care for Military Dependents:*

A request from the Committee on Government Financed Medical Care was presented, asking approval of an extension of the present "Medicare" contract to cover the Government fiscal year ending June 30, 1962. On motion duly made and seconded, authority was voted for the appropriate officers to sign a renewal contract for the year ending June 30, 1962.

On motion duly made and seconded, the Liaison Committee to Medicare and to VA Home Town Care Programs were directed to continue its efforts to have the Department of Defense incorporate the provisions of the 1960 Relative Value Studies into the Medicare contract.

3. *San Mateo County Medical Society:*

On motion duly made and seconded, it was voted to permit the San Mateo County Medical Society to review the tabulated returns of the 1958 Relative Value Studies in conjunction with a study being made by the society on possible prepayment programs.

4. *Committee for Emergency Action:*

Dr. Bostick reported on a meeting held earlier by the Committee for Emergency Action, at which

PAUL D. FOSTER, M.D. . . . . President
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JAMES C. DOYLE, M.D. . . . . Speaker
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RALPH C. TEALL, M.D. . . Vice-Chairman of the Council
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it was agreed to suggest to the American Medical Association (1) that the organization declines to take part in taped television programs unless adequate opportunity for editing were provided; (2) that restraint be used, especially as regards press releases, when controversial items were presented by other interests; (3) that all statements to the press be prepared with due regard to their emotional impact on the general public; (4) that paid publication advertising be employed where impartial press treatment did not appear to be forthcoming, and (5) that the A.M.A. make further efforts to plan discussions of health problems with representatives of labor, management, insurance and legislative bodies, on the subject of the provision of health care for all segments of the population.

Dr. Bostick also reported that the committee had voted to recommend to the Council that the members of the Committee for Emergency Action, together with the chairmen of the Commission on Medical Services, the Committee on Fees and the Committee on Government Financed Medical Care be named as a special committee to represent the Association in dealings with officials of the State of California on the question of uniform schedules for professional fees under state-sponsored programs. On motion duly made and seconded, this recommendation was approved.

5. *State Legislation:*

Mr. Hassard reported that bills had been introduced in the State Legislature which would (1) make the admission of podiatrists to staff membership in district hospitals mandatory, and (2) permit hospitals which are currently used for the training of podiatrists to provide internships and residencies for such students. On motion duly made and seconded, it was voted to oppose the first of these two measures and to recommend to the Committee on Legislation that it exercise its own judgment on the second.

6. *Conference of County Society Officers:*

Councilor Todd gave a progress report on the plans for the Annual Conference of County Society Officers to be held February 11 and 12. Members of the Council were invited to attend a dinner honoring the guest speakers for this conference.

7. *Commission on Community Health Services:*

Chairman MacLaggan of the Commission on Community Health Services presented several proposals approved by the committee for legislation in the field of blood alcohol determination and presumption of drunkenness among automobile drivers registering various levels of blood alcohol. On motion duly made and seconded it was voted to refer these recommendations to the Committee on Legislation.

8. *Committee on Public Relations:*

Dr. Malcolm Watts, chairman of the Committee on Public Relations, reviewed the program and the objectives of the committee. Dr. John Schaupp, chairman of the subcommittee on radio, television and motion pictures, reported on the progress of the television programs which had previously been approved for production. John Hunton reported on the expenditures to date by the committee and the prospective expenditures to the close of the fiscal year.

Councilor Campbell proposed that study be given to amendments in the By-Laws of the American Medical Association to provide that each state association with 10,000 or more active members be entitled to one position on the Board of Trustees.

Councilor Teall discussed the public relations program and urged that immediate attention be given to a more aggressive presentation of the position of the medical profession to the public.

On motion duly made and seconded, the following resolution was approved:

Resolved: That the Committee on Public Relations, in view of current national and state pressures for compulsory medical care, be instructed by the Council to implement immediately, in consultation with the Committee for Emergency Action, its second phase and more aggressive approach supporting C.M.A. attitudes regarding financial and economic facets of the present and proposed systems of medical care; and that the Committee on Finance be instructed to explore all possibilities of using funds now held in trust for this purpose.

Adjournment:

There being no further business to come before it, the meeting was adjourned on Saturday, February 11, 1961, at 9:20 a.m.

SAMUEL R. SHERMAN, M.D., *Chairman*
JOHN HUNTON, *Acting Secretary*

Maternal MORTALITY REPORTS

THE COMMITTEE ON MATERNAL AND CHILD CARE was organized in December 1956 and has been responsible for developing and conducting a continuous study on all maternal deaths in California. The study is a cooperative one between the California Medical Association and the California State Department of Public Health.

The committee is composed of obstetricians, pediatricians, general practitioners, pathologists, anesthesiologists and public health officers. It is charged with the responsibility of careful study of each maternal death (a death occurring in any woman who is pregnant or within 90 days of termination of pregnancy). The committee has the responsibility of identifying the avoidable factors in each death, of developing and implementing recommendations for preventing further similar deaths and of preparing periodic reports of statistical analysis of its findings.

The study is on a voluntary basis and permission is first obtained from the attending physician before any investigation is conducted. The committee feels that the material obtained from this study will have great educational use.

Sincere thanks is acknowledged to Theodore A. Montgomery, M.D., and Leslie Corsa, M.D., of the California State Department of Public Health, and to William Benbow Thompson, M.D., and Edmund William Overstreet, M.D., who have given so generously of their time, effort and guidance in the committee's work.

JAMES W. RAVENSCROFT, M.D.
Chairman, Committee on Maternal and Child Care

These case reports come from the files of the State Department of Public Health which, together with the California Medical Association, now sponsors the statewide studies of all maternal mortalities. Selected cases are to be presented here from time to time as a matter of interest and illumination to all physicians concerned with the practice of obstetrics. It is hoped that a review of such significant cases will help to improve the welfare of future California mothers.

CASE 1

THE PATIENT was a 38-year-old gravida 5, para 2. She sought initial medical care at one hospital, where she was seen at 4:15 p.m. Her condition at that time is described as "*shocky, cold and clammy, with a feeble, thready pulse and moderate rigidity and tenderness of the abdomen in the epigastrium.*"

Previous medical and surgical history is reported as "not available." The patient gave her last menstrual period as having occurred 20 weeks before, but *she had received no prenatal care.* One week before examination in the hospital there was sudden onset of severe epigastric pain, nausea, vomiting and weakness. Fetal movements had not been felt for four hours.

When the patient was first seen, differential diagnosis of acute pancreatitis, biliary colic or perforating ulcer was entertained. At 4:30 p.m., 10.0 mg. of morphine sulfate, 8 ml. of epinephrine, 1:1000 solution, and intravenous plasmoid (amount not stated) were given. Although the patient was under observation for approximately four hours, there is *no report of any laboratory study.*

There is no further knowledge of the patient's condition and progress for the next four hours, after which *she was transferred to a second hospital.* On arrival there at 8:10 p.m., she was in profound shock with a blood pressure of 30/0 mm. of mercury, no palpable pulse, and a precordial rate of 145 per minute. The pregnant uterus was difficult to outline due to moderate abdominal rigidity and generalized abdominal tenderness, most pronounced in the right upper quadrant and suprapubic areas. There was no gross evidence of infection. Except for slight vaginal spotting, there was and had been no gross external bleeding. Laboratory study of the blood showed leukocytes numbering 32,700 per cu. mm.and a *hemoglobin content of 8.1 gm. per 100 ml.*

General measures to combat shock were begun at once. The first transfusion was started 15 minutes after admission and 5 units of blood were given in the next nine hours. Phenylephrine (Neosynephrine®) was given intramuscularly four hours after admission, and immediately afterward administration of this drug by intravenous drip was begun. Nine hours after admission, intravenous administration of levarterenol was started. Intranasal oxygen was started four hours after admission.

The patient died nine hours and 20 minutes after admission to the second hospital, 13 hours and 15 minutes after the initial examination at the first hospital.

CORONER'S AUTOPSY REPORT (Significant Findings)

1. At least four liters of blood in the abdominal cavity.

2. Uterine pregnancy, approximately five months' duration.

3. Multiple subserosal uterine varices.

(a) One ruptured varix—in an area of pronounced thinning of the uterine wall near the placental site.

COMMENT

1. This maternal death resulted from a most unusual and rare lesion. It serves to illustrate, however, the speed of occurrence and the fulminant nature of certain complications of pregnancy.

2. This fact alone points out the importance and essentiality of adequate prenatal care. Had the patient in the case here reported been receiving it, early investigation of her epigastric pain one week before might have averted the lethal terminal episode, for one suspects that intra-abdominal bleeding of small degree probably started at that time. The patient's omission of prenatal care and delay in seeking medical help undoubtedly contributed to her death.

3. Inadequate initial care. Despite the recognition by the first hospital of shock and a possible intra-abdominal hemorrhage, only minimal supportive and diagnostic measures were carried out. Even these should have included immediate blood study for evidence of blood loss, with subsequent transfusion therapy for replacement and for shock. A simple determination of packed cell volume or of hemoglobin might have been of inestimable value even to the second hospital: A comparison of determinations might have made continuing, grave, intra-abdominal hemorrhage more evident.

Finally, the propriety of transfer of this critically ill patient to another hospital is open to serious question. The patient's life could probably have been saved by early laparotomy at the first hospital.

4. The second hospital recognized the probability of an intra-abdominal hemorrhagic catastrophe. Ample measures to combat shock were carried out there. Presumably operation was progressively postponed in the hope of first correcting the shock, a standard surgical principle. Yet when massive hemorrhage continues, this principle does not apply. Another example is that of ruptured ectopic pregnancy. It must have been apparent that this patient's intra-abdominal bleeding was gaining on the anti-shock efforts—though no *repeated* blood determinations confirmatory of this course are reported. Even in hospital number two, this patient's life might have been saved by a bold recourse to abdominal surgery even in the face of severe shock. It is easy for us to say this in hindsight, but not nearly so easy to do it at the critical time. Possibly the memory of this case may contribute to saving some future mother under similar circumstances.

CASE 2

THE PATIENT was a 40-year-old gravida 3, para 2, whose past medical and surgical history is not significant. During her present pregnancy she was seen by a physician on two occasions, in the second and sixth month of pregnancy. The initial physical examination was reported as normal, including clinical estimation of the pelvis.

The pregnancy progressed uneventfully until labor began spontaneously, two days past the estimated date of confinement, and the patient was admitted to the hospital in early labor. During labor of 14 hours, for reasons not stated "augmentation of labor" was accomplished by the *intramuscular administration of one-half minim of Pitocin®* (oxytocin injection) on two occasions approximately six and a half hours before delivery. Analgesic agents given during the first stage were meperidine, 50 mg., and Phenergan® (promethazine) 12.5 mg., both administered intramuscularly.

During the second stage of labor, analgesia was administered by a physician by intermittent N_2O-ether, and the same agents were used for a "short, continuous anesthesia" for delivery. Deep transverse arrest of the vertex occurred, so delivery was accomplished by *Kielland forceps, with application in the classical manner.* The baby, who weighed 6 pounds 4½ ounces, was delivered in good condition.

With delivery of the infant's head, Ergotrate® (ergonovine) 1 ml., was given intravenously. The placenta was delivered spontaneously four minutes after the baby. *No mention is made of any manual exploration of the uterine cavity.* No undue bleeding is reported up to this point, but immediately after the placental expulsion a loss of 500 ml. of blood occurred, ascribed to "uterine atony." At once, Pitocin® 1 ml. intramuscularly, and Methergine® (methylergonovine), 1 ml. intravenously, were administered and continuous massage of the uterine fundus was instituted. The *cervix* was then inspected and a *4-cm. laceration* was noted (location not specified) and repaired. Although episiotomy had been performed there was further laceration of the vagina

and repair of both was carried out. *Again, there is no mention of any exploration of the uterine cavity.*

Following the repairs, the patient was reported to be in good general condition. But suddenly there occurred what is simply described as a "massive" hemorrhage. The patient went promptly into such profound shock that venous collapse prevented venipuncture to give plasmoid. While a cut-down was in progress the patient died—approximately one hour after delivery of the placenta.

Postmortem examination was not performed.

COMMENT

1. One can only speculate upon the basic cause of maternal death. Such massive, sudden hemorrhage from simple uterine atony is so rare that one strongly suspects uterine rupture or laceration. Such a tear into the uterine vessels could alone account for the massive hemorrhage described—perhaps with unrecognized intra-abdominal bleeding as well.

2. There is no evidence to suggest that uterine rupture occurred during the first stage of labor. Yet it might well have *started* as a result of injudicious intramuscular use of oxytocin as a labor stimulant. In approximately one patient in a thousand, inherent sensitivity to oxytocin is so great that even half a minim will produce severe tetanic uterine contraction and even uterine rupture. Labor stimulation by oxytocin is best accomplished by intravenous use of very dilute solutions (not more than 0.5 ml. in 1000 ml. of intravenous solution) with special attention to extremely low dosage during the first half hour of intravenous flow as a test for sensitivity. Moreover, even thereafter it is important to bear in mind that any change in rate of drip is not fully reflected in uterine activity for about half an hour.

3. It seems likely that uterine rupture occurred during the forceps delivery, perhaps from undue traction upon a cervix not fully retracted, perhaps from the classical application of Kielland forceps. Following such an application, it should be routine to explore the uterine cavity after placental expulsion, in search of a laceration. In this patient, the discovery of a 4 cm. cervical tear and an additional vaginal tear strongly suggested the occurrence of undue trauma during forceps application or during delivery. Hence uterine exploration was mandatory. Whether such exploration might have saved the patient's life by leading to prompt hysterectomy is debatable.

4. Finally, this case reemphasizes the imperative necessity of *not* sending a patient from the delivery room to her postpartum bed for *at least an hour after completion of the third stage*. The vast majority of postpartum hemorrhagic complications occur during this time. Most of them are not as fulminant as in this case, and the *immediate* availability of delivery room equipment, anesthesia and personnel can often tip a grave balance in the patient's favor, whereas the delay occasioned by intermittent patient observation on a ward and transfer back to the delivery room may be the final straw in a sequence of lethal events.

California Medical Association
Committee on Maternal and Child Care

Hypnosis

A Report of the C.M.A. Committee on Mental Health

TODAY the press, radio and television highlight the use of hypnosis as an easy, spectacular and magical approach to the relief of pain and the rapid dissolution of physical symptoms, and for entertainment of an unusual type.

The public, in increasing numbers, is requesting the use of hypnosis for relief or cure of a multiplicity of symptoms. "Quickie Courses," on hypnosis, sponsored by mixed professional and lay groups are being offered as the use of this medical tool increases in popularity. Some courses are offered for entertainment purposes and may be "taken" by the way of records or correspondence.

The public is being misled, unproved claims are being made and the use of hypnosis is being oversimplified and events overdramatized.

Improper use of hypnosis can be very dangerous to some people (both patient and hypnotist himself). Study has shown the onset of a large number of untoward events, including psychosis, in the artificial masking of organic problems by improper use of hypnosis.

The nature of hypnosis renders its inappropriate use particularly hazardous. For hypnosis to be used safely, even for the relief of pain or for sedation, more than a superficial knowledge of the dynamics of human motivation is essential.

Experience has shown that many untoward complications do not present themselves for some time after the use of hypnosis. In fact, several homicidal and suicidal events have occurred in association with the use of hypnosis.

The C.M.A. has a duty to inform the public and its own members about the dangers of hypnosis and the limits of its proper use.

Hypnosis is a specialized medical procedure and as such is an aspect of medical practice. Hypnosis provides an adjunct to research, to diagnosis and to treatment in medical practice.

Hypnosis is appropriately and properly used in the course of therapy only when its employment serves therapeutic goals without causing undue risks to the patient. With selected patients, it can be used for sedative, analgesic and anesthetic purposes; for the relief of apprehension and anxiety; and for symptom suppression.

Hypnosis or hypnotic treatment, as in any other medical procedure, calls for all examinations necessary to a proper diagnosis and to the formulation of the immediate therapeutic needs of the patient.

The technique of induction of the trance state is by far the least important of the many facets of the hypnotic procedure and under no circumstances should it be taught or used independently.

Proper safeguards for the use of hypnosis are vitally important to patients, to physicians and to the general public. In the interest of encouraging the safe use of hypnosis, the following principles are presented:

1. Physicians practicing hypnosis should do so only in their particular field of medical competence.

2. The need for continued study of hypnosis and for adequate research is emphasized, with particular reference to delineating its place in the total treatment program.

3. An expansion of facilities for the teaching of hypnosis is needed particularly at the postgraduate level. The establishment of postgraduate courses in medical schools and other teaching centers, under the direction of the department of psychiatry is recommended.

4. Training in all aspects of hypnosis should be made available to physicians and dentists requesting it.

5. The teaching of hypnosis should be of sufficient duration and depth for physicians or medical students to acquire adequate understanding of its appropriate place in relation to other medical treatment modalities; of its indications and contraindications; of its values and its dangers.

6. The teaching of hypnosis should take place in medical schools where students can acquire adequate knowledge of its principles and application. When taught in such a climate, where students can acquire adequate knowledge of medical and psychiatric principles, hypnosis may become a useful adjunct to therapy.

7. The use of hypnosis for entertainment purposes, because of the harm it may do to certain individuals, should be prohibited by law. This is a dangerous and improper use of hypnosis, as well as degrading to a useful medical tool. (1960 House of Delegates resolution No. 37 requests the introduction of legislation to accomplish this end.)

8. The C.M.A. condemns the advertising of hypnosis for any purpose.

9. The C.M.A. vigorously condemns correspondence or recorded courses in self-hypnosis or hypnosis per se.

The Place of Hypnosis in Medicine

ALFRED AUERBACK, M.D., San Francisco

THE CURRENT CONTROVERSY regarding the place of hypnosis in medicine is another chapter in a cyclic history extending back over the past two centuries. While hypnosis, as a technique, has long been prac-

ticed in primitive cultures going back to the earliest civilization, its use was limited to the medicine men and priests of these early cultures (Greek, Egyptian, Oriental). Today the press, radio and television highlight its use as an easy, spectacular and magical approach for the relief of pain and the rapid dissolution of symptoms. Man has always eagerly sought a rapid and harmless way to ease himself of pain, anxieties, fears and symptoms. In this quest for rapid cures, enthusiastic claims have tended to becloud critical evaluation of hypnosis.

The first medical man to make use of hypnosis was Mesmer who, in Vienna and then in Paris about the year 1778, introduced the concept of "animal magnetism." A study by the French Academy about six years later discredited his work. Over the period of the next half century a number of physicians, in particular, Elliotson, Braid and Esdaile made use of hypnosis in their medical practice. They performed surgical procedures under hypnotic anesthesia with remarkable results and a minute mortality rate. Braid introduced the word "hypnosis" in 1843. Hypnosis had a vogue in the United States during the 19th century. In the *Journal of the American Medical Association*, October 27, 1888, there was a report on hypnosis incorporating certain inclusions as follows:

> "One never hypnotizes any subject without obtaining his or her formal consent. Always hypnotize in the presence of a third person. Never give any suggestion other than those for the patient's happiness and health. Public exhibitions of hypnosis should be prohibited by laymen and the use of this agency should be confined exclusively to the medical profession."

These rules still apply three-quarters of a century later.

In the latter part of the 19th century hypnosis came under study in France with Bernheim, Liébault and Charcot, the most prominent practitioners. At this time, it was recognized that hypnotic suggestion would remove hysterical symptoms in patients. Freud, after study in Charcot's clinic, returned to Vienna and began to use hypnosis in treating his patients. He soon found that while hypnotic suggestion would remove symptoms, very often the patient would develop other symptoms to replace those that had been removed. In addition, he found that many patients could not be hypnotized. Finally Freud rejected hypnosis as a method of treatment. While Freud's experience has profoundly colored the attitude of psychiatrists since that time, the fact remains that, over the years, many psychiatrists have tried hypnosis as a therapeutic technique and in nearly all cases have discarded it as an unsatisfactory tool. During World War I and again during World War II hypnosis was used on soldiers suffering battle fatigue and other emotional reactions to the stresses of war. Under hypnosis they could discuss these stressful situations and be relieved of their anxieties in many cases with sufficient improvement to permit their return to the battle lines. In the past fifteen years hypnosis has had an ever increasing interest so that thousands of physicians and dentists across the country now have had experience with it and use it in variable degree in connection with their practice.

In 1826 the Paris Academy of Sciences deliberated for five years on the place of hypnosis in medicine. The British Medical Association reported in 1892 on its use. While these early studies indicated hypnosis had some place in the practice of medicine, the question arose repeatedly as to where it belonged in medicine with particular emphasis upon its indications, limitations and dangers. In November, 1953 the British Medical Association appointed a subcommittee to consider the use of hypnosis in relation to medicine and present day medical practice. The report of this subcommittee was published in a supplement of the British Medical Journal, April 23, 1955.

REPORT OF THE BRITISH MEDICAL ASSOCIATION

The report described the hypnotic state as follows:

"A temporary condition of altered attention in the subject which may be induced by another person and in which a variety of phenomena may appear spontaneously or in response to verbal or other stimuli. These phenomena include alterations in consciousness and memory, increased susceptibility to suggestion, and the production in the subject of responses and ideas unfamiliar to him in his usual state of mind. Further phenomena such as anesthesia, paralysis and rigidity of muscles and vasomotor changes can be produced and removed in the hypnotic state."

Among the conclusions of this report are the following:

1. "While hypnotism is of value in the treatment of so-called psychosomatic disorder and psychoneurosis some enthusiastic supporters of this form of treatment fail to enumerate the contraindications and give the impression that it constitutes an approach which should replace all other forms of psychiatric treatment. In the opinion of the subcommittee this view is mistaken. Like other remedies, hypnotism has its indications and contraindications and considerable knowledge and expert judgment are required to decide when hypnotism is likely to help the patient and whether it should be used by itself or as a complement to the other methods of psychotherapy.

"For these reasons, the subcommittee is of the opinion that hypnotism should not be regarded as a specialty independent of psychological medicine.

2. "In addition to the treatment of psychiatric disabilities, there is a place for hypnotism in the production of anesthesia or analgesia for surgical and dental operations, and in unsuitable subjects it is an effective method of relieving pain in childbirth without altering the normal course of labor. It has been claimed that the shock of operative procedures can be mitigated when these are carried out under deep hypnosis but further research is desirable. The amount of work necessary to prepare a patient to undergo surgical operation under hypnotism limits its usefulness.

3. "The dangers of hypnotism have been exaggerated in some quarters. The subcommittee is convinced, however, that they do exist, especially when it is used without proper consideration on persons predisposed, constitutionally or by the effects of disease, to severe psychoneurotic reactions or antisocial behavior. The commission of crimes involving even danger to life is not entirely to be ruled out.

4. "Hypnotism may involve the rapid or immediate development of a relationship between hypnotist and subject of the same order and intensity as is produced more slowly in the course of psychotherapy. The trained psychotherapist must be aware of this relationship as part of the therapeutic process and must recognize its potentiality for harm and be able to deal with it. The application of the hypnotic technique without such knowledge and experience provides no control of the powerful emotions which may be released. For this reason, the subcommittee considers that harm can be done by the application of hypnotism in unsuitable subjects, particularly when it is used by persons indifferent to the well-being of the subject or ignorant of the morbid complications of the hypnotic state.

5. "It is recommended that a description of hypnotism and its therapeutic possibilities, limitations and dangers should be given to medical undergraduates during their psychiatric course.

6. "Instruction in the clinical use of hypnotism should be given to all medical postgraduates training as specialists in psychological medicine and possibly say, to trainee anesthetists and obstetricians, so that they will understand its indications and practical application. The subcommittee holds that no special "gift" is required to induce it; there are various techniques of equal efficacy.

7. "As its work progressed, the subcommittee became convinced of the need for further research into hypnotism. Medical men have hesitated to take a serious interest in a procedure which is so unlike the orthodox methods of medical science. Nevertheless, it is thought that since hypnotism can achieve good results in certain cases and since present theories as to its nature and mode of action are speculative it constitutes a challenge to medical science."

REPORT OF THE AMERICAN MEDICAL ASSOCIATION

In November, 1956, at the annual meeting of the Council on Mental Health of the American Medical Association with the representatives of the Mental Health Committees of the state medical associations, a subcommittee made a study of the use of hypnosis in medical practice. The Council on Mental Health, constituting itself as a committee of the whole, studied this report over a two-year period and submitted its recommendations at the annual meeting of the American Medical Association in June, 1958. At this time, the report was endorsed by the Board of Trustees and the House of Delegates of the American Medical Association. In the *Journal of the A.M.A.*, September 13, 1958, "A Report on Medical Uses of Hypnosis" was published. The conclusion of this report is as follows:

"General practitioners, medical specialists and dentists might find hypnosis valuable as a therapeutic adjunct within the specific field of their professional competence. It should be stressed that all those who use hypnosis need to be aware of the complex nature of the phenomena involved.

"Teaching related to hypnosis should be under responsible medical or dental direction and integrated teaching programs should include not only the techniques of induction but, also, the indications and limitations for its use within the specific area involved. Instruction limited to induction techniques alone should be discouraged.

"Certain aspects of hypnosis still remain unknown and controversial, as is true in many other areas of medicine and the psychological sciences. Therefore, active participation and high level research by members of the medical and dental professions are to be encouraged. The use of hypnosis for entertainment purposes is vigorously condemned."

While hypnosis has been and is being used for the alleviation or elimination of symptoms or habits, the physician using it should be aware of the dangers involved. It must be realized that symptoms or habits develop for a reason even though the reason in most cases is unknown to the patient. The development of headaches, pruritus, tics, fears, phobias, allergic phenomena and other similar conditions are the results of what is going on within the psychic life of the individual. The headache may be a substitute for a rage reaction, the pruritus or allergic symptoms may be a result of external stimuli which the patient interprets as noxious in nature. Excessive smoking, drinking or eating represent techniques unconsciously developed to handle the disturbing problems in the patient's life. While hypnotic suggestion may alleviate or eliminate these

symptoms, there is always the possibility that new symptoms may arise to take their place. The disappearance of the headache may be followed by tantrums or rage reactions. The elimination of smoking may be followed by overeating. Disappearance of nail biting or finger sucking may be followed by teeth gnashing. Sometimes the anxiety symptom or the phobia may be covering a serious psychiatric disorder and its removal by hypnotic suggestion may be followed by the onset of an acute psychotic reaction. There is an increasing number of cases of untoward reactions following hypnotic procedures. It cannot be too strongly stressed that symptoms represent an attempt at solution of the patient's intrapsychic conflicts and their indiscriminate removal by hypnotic methods may trigger catastrophic results. To remove these symptoms by means of hypnosis without first understanding the personality makeup and psychodynamic factors underlying the symptom may cause a serious disruption in the patient. Physicians should have a basic knowledge of personality structure, character disorders and mental mechanisms in order to avoid the possibility of untoward sequelae.

The results of hypnotic repression may be considered in a manner similar to the housewife who rearranges the furniture in her living room. On moving the furniture around she can make the room look entirely different but fundamentally it contains the same pieces as it had before. Similarly, a patient after hypnotic treatment is still much the same person as he was before even though his headache or tic or phobia apparently has disappeared. Often the patient appears well and may continue well and there is no evidence of any untoward replacement of the offending symptom. In such cases, it may be assumed that hypnotic treatment did benefit the patient. However, there always exists the possibility that at some later date the repressed symptom or some substitute symptom may recur.

In January, 1961, a questionnaire on hypnosis was sent to 830 psychiatrists practicing in California. Of that number 403 psychiatrists responded to the questionnaire of whom 188 had had some experience with hypnosis. Of these, 50 were using it as a psychotherapeutic technique at the time of this survey and of these only 20 found it to be really worthwhile. The majority reported that in their hands it had not proven useful. Complaints included the fact that the results were variable, the induction was too difficult or time consuming, interference with the doctor-patient relationship developed often with increased dependency by the patient. Very frequently, untoward events would occur. Seventy-five psychiatrists reported 114 cases of psychosis triggered by hypnotic measures. Anxiety reactions, panics, sexual acting-outs, depression and suicidal attempts, were some of the other undesirable results of treatment. Cases were cited where hypnosis induced psychopathological states in the hypnotist himself.

This survey indicated that up to the present the training of physicians and psychiatrists in the techniques, uses and limitations of hypnosis has been sadly neglected. It was felt generally that psychiatrists, physicians and dentists should be trained in the techniques of hypnosis with emphasis upon an understanding of human personality and psychodynamics. In the field of psychiatry, it was felt that hypnosis should be used largely as a research tool until its place is better defined. However, it was felt that in the production of anesthesia and analgesia for obstetrics, dentistry and surgical procedures hypnosis definitely had a place. However, any physician or dentist using it should understand its emotional significance to the patient.

While there is an agreement that hypnosis is useful in the production of anesthesia and analgesia, it must be recognized that not all people react favorably to a feeling of "losing control" or the fact that they might be "coming under somebody else's influence." In the prepsychotic individual even a transient dissociation produced for dental analgesia through hypnosis may trigger untoward results.

Another area of danger is the use of posthypnotic suggestion. It is possible for the patient in hypnotic trance to be given various suggestions for automatic behavior at variable periods following termination of the hypnotic trance. During these periods of posthypnotic automatism the patient is unaware of his surroundings to some degree and may expose himself to danger or do some foolhardy deed. A number of such instances were reported in the survey.

There is no question that hypnotic methods represent a powerful tool in the hands of the physician who is knowledgeable on the subject. With an understanding of the psychological workings of his patient the doctor can, through hypnosis, recognize the patient's nonverbalized fears and can reassure him on the basis of his knowledge. However, hypnosis is a two-edged sword and when used unwisely and injudiciously or in areas beyond the range of the physician's competence, unfortunate results may develop. At times even in the hands of a skilled psychiatrist unexpected mishaps may occur in association with the use of hypnosis.

In the newspapers and the telephone directory are advertisements for institutes and consultants offering to "aid the personality, the memory, mind or nerves of patients and to relieve shyness, speech or sleep difficulties, eating or drinking problems" to name but a few. The background, training and motivation of many of these individuals is open

to question. The state of hypnosis is not therapeutic. It is what is done under hypnosis in relation to the total problem of the patient that counts. Too often these unscrupulous individuals have no qualifications whatsoever for the work they undertake to do.

Despite its long history very little is still known about the nature of hypnosis, its areas of usefulness and its possible dangers. Hypnosis should be taught to the medical students as part of their training so they can incorporate it into their medical armamentarium learning both the indications and contraindications for its use. Physicians or dentists using it should understand its uses and abuses and not venture beyond the limits of their professional training. The temptation to probe the psyche may lead to disaster. Even in the most experienced hands untoward events can occur. One psychiatrist reported the precipitation of overt psychoses in two patients. "I got scared and quit hypnosis." Another stated that he "cured" a patient's hysterical blindness, whereupon she stabbed her boy friend. Many reported psychotic episodes following hypnotic weight reduction.

The magical quality implicit in hypnosis gives the untrained practitioner feelings of omnipotence and psychotic episodes in the hypnotist himself are not infrequent. Several months ago a self-trained "hypnotist" killed several persons in a psychotic episode while trying to entice a girl into sexual activity in the hypnotic state.

The Committee on Mental Health of the California Medical Association has been studying this problem of hypnosis. The committee feels that the improper use of hypnosis can be very dangerous. Its studies have shown that very often the public is being misled, that unproved claims have been made, that the use of hypnosis is being oversimplified and cures are being overdramatized. The committee believes that the medical profession has a duty to inform the public and the members of the medical profession about the dangers of hypnosis and the limits of its proper use. It is a recommendation of the committee that courses in hypnosis should be given exclusively in conjunction with recognized medical teaching institutions under the Department of Psychiatry. These courses should be conducted over fairly long periods of time, perhaps six months, in conjunction with other undergraduate and postgraduate training in medicine.

In February, 1960, at the Annual Meeting of the California Medical Association, the House of Delegates passed resolution No. 37 which opposes the use of hypnosis for entertainment purposes because of the harm is may do to certain individuals, that it degrades a useful medical tool and that the California Medical Association should encourage the introduction and passage of necessary legislation that would prohibit this dangerous and improper use of hypnosis.

Uses and Abuses of Hypnosis

JACK B. LOMAS, M.D., Los Angeles

THE REVIVAL OF INTEREST in the use of an old medical tool—hypnosis, has attracted a great deal of attention of physicians, psychologists, dentists and laymen. Press, radio, television have highlighted its use as a spectacular and easy magical approach for the relief of pain and a rapid dissolution of symptoms as a quick and easy method to solve man's ills. Throughout the ages, and again now, man eagerly seeks a rapid easy and harmless approach to ease himself of pain, anxiety, fear and disabling symptoms. In this quest for the rapid cure or "magical pill" or method, enthusiastic claims cloud his critical judgment. Spectacular responses to suggestion as in hypnosis may often produce temporary relief without any consideration being given to the lasting value of the method used or the price man may have to pay in the long run for the "cure."

It is our responsibility as physicians most directly involved in the care of our patients to adhere strictly to this critical judgment and evaluation of methods used in medical practice. As psychiatrists, we should call to the attention of our colleagues the benefits and usefulness of hypnosis, but also its side effects and drawbacks.

The renewed interest in hypnosis by the public has resulted in pressure on the physician who seeks to meet demands of patients requesting the use of hypnosis for relief or cure of a multiplicity of symptoms. To satisfy these patients' pressures, many physicians who have never been interested or trained in the uses of this method have sought ways to fulfill this demand. "Quickie courses" on hypnosis sponsored by mixed professional and lay groups attempting to fill this vacuum have attracted physicians, dentists, psychologists, as well as laymen to supply this demand. The qualifications and motivations of many individuals sponsoring these one or two-day courses is open to question. A number of such courses or "seminars" have been closely tied up with entertainment and spectacular settings. One sponsor even offered to make reservations for "girlie shows" in Las Vegas during the "seminars" which would seem to identify hypnosis with entertainment and something spectacular as well as a gamble.

Fortunately, very few professional people who have learned this technique (which can be learned in an hour or two) have pursued its use in their

practice. The percentage of physicians who use this method in their practice is relatively small. Some anesthetists, obstetricians, surgeons, dentists, psychiatrists and general practitioners have used this tool to good advantage in selected and fairly well defined accepted medical areas with a minimal amount of adverse effects. By far the greatest harm results from the use of this method by untrained self-called psychologists, lay healers who advertise themselves as specialists in hypnotism. They advocate its use as a means in itself to remove symptoms and encourage the use of self-hypnosis.

Hypnosis is a valuable psychiatric tool but unwisely used can threaten the sanity of patients or of the untrained hypnotist himself, if unskillfully employed. A number of communications have come to my attention from psychiatrists who have had to deal with the delayed side effects of the original stimulus of hypnosis and which ended in a psychosis or a severe personality disturbance requiring extensive psychiatric help and often hospitalization. Several malpractice suits have been reported in which the competence of the one or two-day course hypnotist was under question. The American Medical Association legal department in 1959 cited two such malpractice suits involving large sums of money.

More and more cases with post-hypnotic bad effects are coming to the attention of psychiatrists, that began in a benign way with little attention to the knowledge of the whole problem facing the patient and no awareness of underlying psychodynamic factors involved. Meldman[1] is one of these physicians who are increasingly reporting personality decompensation after hypnotic symptom suppression. As medical director of a 50-bed psychiatric hospital, I have seen a few such patients who decompensated after one or a few hypnotic experiences requiring hospitalization and intensive psychiatric care. One such patient, previously an adequately functioning individual, accompanied a friend at her session of self-hypnosis. Several days later this onlooker was obsessed by the idea that the hypnotist had "taken her mind away." This was the beginning of an acute psychotic breakdown which, fortunately, was seen early and which responded rapidly to intensive psychiatric care.

Many times, symptoms such as phobias, nonorganic pain, hysterical paralysis or dermatitis, to name a few, are found in patients as a last line defense against a more serious and deeper emotional conflict such as a severe depression with suicidal ideas or a schizophrenic process. To remove these symptoms by means of hypnosis without first helping to establish a better method of dealing with the hidden problem may result in a serious eruption of the underlying problem. Physicians should have a basic knowledge of personality structure, character defect disorders, mental mechanisms and a knowledge of the mechanisms of defenses in order to avoid untoward sequelae in the adjunctive use of hypnosis.

Doctor Harold Rosen, chairman of the A.M.A. Committee on Hypnosis, warns against the encouragement of the use of self-hypnosis unless the person who attempts to use it has had an intensive multi-session psychiatric evaluation. He reports how some dentists and obstetricians have suggested to hypnotized patients that they can self-hypnotize away future headaches, cramps or malaise. In at least three cases such patients have developed dangerous sequelae.

Hypnosis may induce psychopathological states in the hypnotist himself. It may invoke in him fantasies of omnipotence and omniscience. Doctor Rosen, in the past seven years, states that he and his associates have been asked to see as patients never less than three hypnotist colleagues a month. Some of these have been psychotic and a number required closed ward hospitalization. Among the psychotic hypnotists were several teachers of so-called "medical-dental hypnosis."

The classified ads in our daily newspapers, as well as the telephone directory, under the heading of hypnotism list high-sounding institutes and consultants who are lay people offering to give "aid for personality, memory, mind, nerves, shyness, speech defects, insomnia, confidence; to stop smoking and drinking, relax, sleep," etc. Some of these hypnotists have been seen professionally by me in consultation for their own problems and one can question the background, training and motivation of these individuals. The state of hypnosis is not therapeutic. It is what is done under hypnosis in relation to the total problem of the patient that counts and this would include all of the medical aspects involved.

The public and medical profession is in need of protective laws similar to the Harrison Anti-Narcotic Act, Federal Pure Food and Drug Cosmetic law, and State Medical Practice laws to curb the use of hypnotism by other than qualifying persons. Already some communities in our state have taken steps to enforce Section 2141 of the California Business and Professions Code. They correctly hold that hypnotism has continued to be used with satisfying results in the practice of medicine with certain types of mental disturbances, and it is the opinion of the Board of Medical Examiners that the use of hypnotism by other than qualified persons is a dangerous procedure which might affect the health of the person involved. The public must be protected from charlatans, quacks and other unscrupulous persons.

In the past year, the C.M.A. Committee on Mental Health took note of the fact that quite a few people were advertising to the general public and the professions the fact that they are giving a course in hypnotism. These courses range from covering a period of a few hours to a few days. It was also pointed out that many medical societies and physicians are being asked to recommend a qualified hypnotist.

The committee agreed that the improper use of hypnosis can be very dangerous to some people. It was felt that the public is being misled, that unproved claims are being made, that its use is being oversimplified and many hypnotic events are being overdramatized. Further, this committee pointed out that the medical profession has a duty to inform the public and its own members about the dangers of hypnosis and the limits of its proper use. The committee recognized that it is relatively easy to learn the technique of inducing hypnosis. It was the recommendation of the committee that courses in hypnosis should be given exclusively in conjunction with recognized medical teaching institutions under the Department of Psychiatry. They took note of the comment of the A.M.A. Committee on Hypnosis that stated that courses in hypnosis should be conducted over fairly long periods of time, perhaps six months or more, in conjunction with other pre- and postgraduate training in medicine. The departments of psychiatry of the medical schools in our state have indicated a willingness to plan and provide such courses.

During the past year, the C.M.A. passed Resolution No. 37 which opposes the use of hypnosis for entertainment purposes because of the harm it may do to certain individuals, that it degrades a useful medical tool and that the C.M.A. shall encourage the introduction and passage of necessary legislation to prohibit this dangerous and improper use of hypnosis.

Wolberg,[2] in his article on Hypnotherapy which I can recommend to every physician for reading, points out how "hypnosis has never been freed from the obloquy of its superstitious origins which compromise its reputation to this day." He writes of "misguided and overenthusiastic disciples who are motivated to find phenomena in the trance state (which he uses synonymously with hypnosis) that satisfy their inner needs for the bizarre." He further states that "Hypnosis is falsely advocated

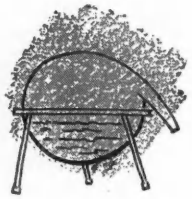
1) as a scalpel to the unconscious in an effort to effectuate a short cut psychoanalysis;
2) as a bludgeon to crush and disintegrate symptoms;
3) as a device to bring the patient into conformity with philosophical precepts and modes of living dictated by the therapist who presents himself as a model."

We return to the tenet that only by understanding the side effects and dangers of any medical discipline can it effectively and correctly be used.

REFERENCES

1. Meldman, M. J.: Personality decompensation after hypnotic symptom suppression, J.A.M.A., 173:359-361, May 28, 1960.

2. Wolberg, L. R.: American Handbook of Psychiatry, Vol. II, Chapter 73, pages 1466-1481, Basic Books.



4 POSTGRADUATE COURSES

C.M.A. ANNUAL SESSION • *April 29–May 3, 1961* • *Los Angeles*

THE CALIFORNIA MEDICAL ASSOCIATION *in cooperation with the Medical Schools of* UNIVERSITY OF SOUTHERN CALIFORNIA *and* COLLEGE OF MEDICAL EVANGELISTS, *will present four Postgraduate Courses at the time of the Annual Session in April. These courses will be clinically oriented and will include case presentations.*

Choose the course which most interests you, follow the course, and the 1961 session will send you back to your practice stimulated and refreshed.

Look for the program giving complete details which will arrive in your office in March.

• By COLLEGE OF MEDICAL EVANGELISTS

Clinical Neurology—9 hours

Time: Sunday, April 30, 9:00 a.m. to 12:00 noon; Monday and Tuesday, May 1 and 2, 2:00 p.m. to 5:00 p.m.

Place: White Memorial Hospital. *Fee:* $25.00

• By UNIVERSITY OF SOUTHERN CALIFORNIA

Uses and Limitations of Laboratory Tests—9 hours

Time: Saturday, April 29, 9:00 a.m. to 12:00 noon; 1:30 p.m. to 5:00 p.m.; Sunday, April 30, 9:00 a.m. to 12:00 noon.

Place: Los Angeles County Hospital. *Fee:* $25.00

Practical Gynecology—9 hours

Time: Saturday, April 29, 9:00 a.m. to 12:00 noon; 1:30 p.m. to 5:00 p.m.; Sunday, April 30, 9:00 a.m. to 12:00 noon.

Place: USC School of Medicine. *Fee:* $25.00

Cardiac Resuscitation—2 hours

SECTION I*—Saturday, April 29, 9:00 a.m. to 11:00 a.m.

SECTION II*—Sunday, April 30, 2:00 p.m. to 4:00 p.m.

Place: USC School of Medicine. *Fee:* $30.00

*Each Section is all-inclusive. Each Section is limited to 15 registrants from areas other than San Francisco or Los Angeles.

APPLICATION FOR ENROLLMENT

Mail to: POSTGRADUATE ACTIVITIES, CALIFORNIA MEDICAL ASSOCIATION
2975 Wilshire Boulevard, Los Angeles 5, California

With check or money order in the amount of $_____ made payable to *California Medical Association*

Name_____

Address_____

I am in General Practice_____ I limit my practice to_____

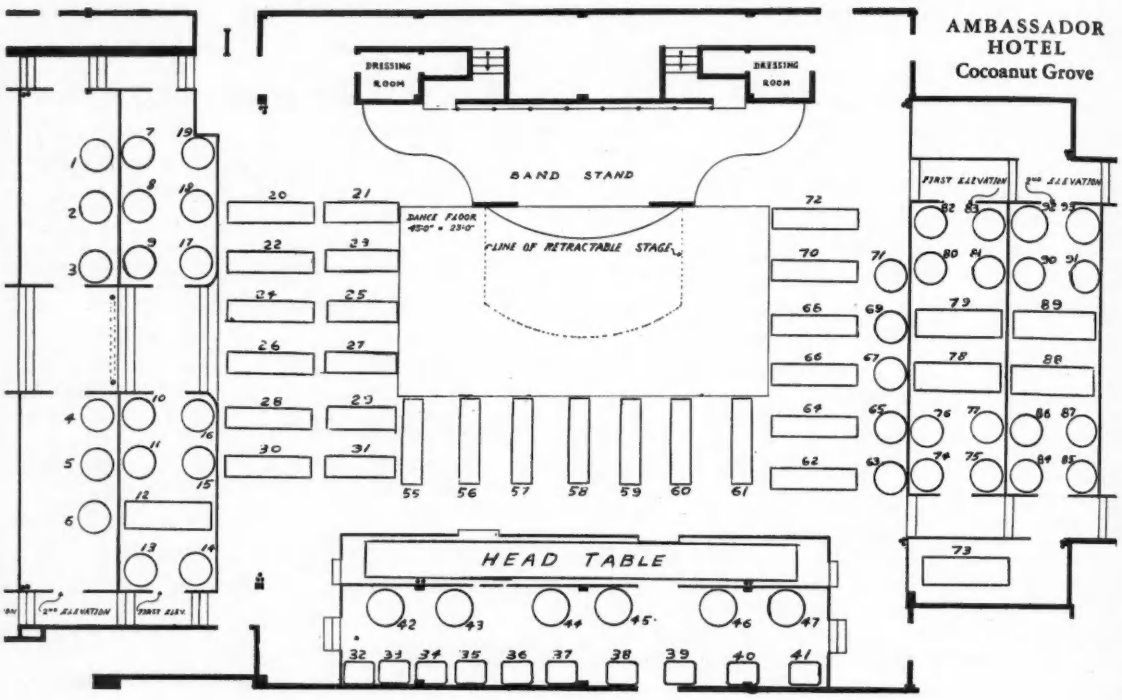
Medical School Attended_____ Year of Graduation_____

Please enroll me in the course indicated by ✓.

- ☐ 1. **Clinical Neurology** (9-hour course, Sunday morning; Monday and Tuesday afternoons)—$25.00
- ☐ 2. **Uses and Limitations of Laboratory Tests** (9-hour course, Saturday, all day; Sunday morning)—$25.00
- ☐ 3. **Practical Gynecology** (9-hour course, Saturday, all day; Sunday morning)—$25.00
- ☐ 4a. **Cardiac Resuscitation—Section I** (2-hour course, Saturday morning)—$30.00
- ☐ 4b. **Cardiac Resuscitation—Section II** (2-hour course, Sunday afternoon)—$30.00

COME to the...

ANNUAL SESSION



Choose the location of your table from the floor plan above. The corresponding table number below gives the number of seats at each table. Please fill out coupon on opposite page.

Table Number	Number of Seats	Table Number	Number of Seats	Table Number	Number of Seats	Table Number	Number of Seats	Table Number	Number of Seats
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2	6	20	10	37	2	62	12	79	12
3	4	21	10	38	2	63	4	80	6
4	4	22	10	39	2	64	12	81	4
5	6	23	10	40	2	65	4	82	4
6	4	24	10	41	2	66	12	83	6
7	4	25	10	42	8	67	4	84	4
8	4	26	10	43	8	68	12	85	6
9	4	27	10	44	8	69	4	86	6
10	4	28	10	45	8	70	12	87	4
11	4	29	10	46	8	71	4	88	12
12	12	30	10	47	8	72	12	89	12
13	4	31	10	55	12	73	10	90	6
14	4	32	2	56	12	74	4	91	4
15	6	33	2	57	12	75	6	92	4
16	4	34	2	58	12	76	6	93	6
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18	6			60	12				

GO to the...

Presidents' Dinner-Dance

SUNDAY, APRIL 30, 8 p.m.

Cocoanut Grove

Reception: EMBASSY ROOM—7 p.m. to 8 p.m.

Entertainment: Holiday in Japan
Steve Parker's Original Oriental Extravaganza from Las Vegas

Music for Dancing: Freddy Martin and His Orchestra

Food: Prime Rib Dinner

Cost: $15.00 per person including reception, tax, tip and cover

TICKETS ARE NOW ON SALE—USE COUPON BELOW

Your tickets will be held for you at the door to the Embassy Room. A receipt for your check will be sent to you. Please present this receipt at the door for your ticket, Sunday night.

OR

Tickets may be picked up at any time Sunday morning or afternoon, April 30, at ticket booth, Woman's Auxiliary registration desk. Requests for tables for large parties should be sent in one envelope and early.

MISS LOUISE KALINICH
Los Angeles County Medical Association
1925 Wilshire Boulevard
Los Angeles 57, California

Enclosed is my check for $_____. Please send me_____ticket(s) to the PRESIDENTS' DINNER-DANCE, Sunday, April 30, 1961.

Table Choice_____ _____ _____ —or assign next best available_____
(Number) 1st 2nd 3rd

Name_____

Address_____

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(Make checks payable to the California Medical Association)

11th ANNUAL

REGIONAL POSTGRADUATE INSTITUTE

SAN JOAQUIN VALLEY COUNTIES

Presented by the California Medical Association Committee on Postgraduate Activities, in cooperation with Fresno, Madera, Kings, Tulare, Kern, Merced-Mariposa, Inyo-Mono and Stanislaus County Medical Societies and the Department of Continuing Education in Medicine and Health Sciences, University of California Medical Center, Los Angeles, Thomas H. Sternberg, M.D., Assistant Dean, Department of Continuing Education in Medicine and Health Sciences.

Guest Speaker: JOHN M. KINNEY, M.D., Associate in Surgery, Harvard Medical School at Peter Bent Brigham Hospital, Boston.

Ahwahnee Hotel, Yosemite National Park

April 14 and 15, 1961

PROGRAM

FRIDAY, APRIL 14

Morning Meetings

THE ACUTE ABDOMEN

9:15-10:00—**Medical Aspects**—John C. Sharpe, M.D.

10:00-10:45—**Electrolyte Problems—Pre- and Postoperative**—John M. Kinney, M.D.

11:00-11:45—**Surgical Aspects**—Wiley F. Barker, M.D.

11:45-12:15—**Panel Discussion**—Wiley F. Barker, M.D., John M. Kinney, M.D., John C. Sharpe, M.D.

Afternoon Meetings

2:00-2:45—**Autoimmune Diseases**—Victor D. Newcomer, M.D., Carl M. Pearson, M.D.

2:45-3:30—**Virus Diseases—Diagnosis and Management**—John M. Adams, M.D.

3:45-5:00—**BLOOD TRANSFUSIONS:**

Uses and Abuses—Wiley F. Barker, M.D.

Problems of Multiple Transfusions—John B. Dillon, M.D.

Uses of Blood and Blood Fractions from the Los Angeles Red Cross Blood Center—Eugene P. Adashek, M.D.

ELECTIVES

2:00-2:45—**Newer Aspects of Hand Surgery**—Franklin L. Ashley, M.D.

2:45-3:30—**Recurrent Abdominal Pain in Children**—Harry F. Dietrich, M.D.

7:00-8:00—**"No-Host" Cocktail Party.**

8:00—**Dinner-Dance.**

SATURDAY, APRIL 15

Morning Meetings

MANAGEMENT OF TRAUMA

9:15-9:55—**General Principles**—Wiley F. Barker, M.D.

9:55-10:35—**Resuscitation**—John B. Dillon, M.D.

10:50-11:30—**Maxillo-Facial Injuries**—Franklin L. Ashley, M.D.

11:30-12:15—**Panel Discussion**—Moderator: Wiley F. Barker, M.D.; Panel: Franklin L. Ashley, M.D., Eugene P. Adashek, M.D., John B. Dillon, M.D., John M. Kinney, M.D.

ELECTIVES

10:50-11:30—**Laboratory Tests Useful in Rheumatoid Disease**—Carl M. Pearson, M.D.

11:30-12:15—**Current Status of Treatment of Fungi**—Victor Newcomer, M.D.

Afternoon Meetings

2:00-2:45—**Diagnostic and Immunization Procedures in Childhood**—John M. Adams, M.D., Harry F. Dietrich, M.D.

3:00-3:45—**What Is an Adequate Physical Examination**—John C. Sharpe, M.D.

3:45-5:00—**Skin Tumor Clinic**—Franklin L. Ashley, M.D., Victor D. Newcomer, M.D.

ELECTIVE

2:00-2:45—**Medical Diseases of the Back**—Carl M. Pearson, M.D.

HOST: Fresno County Medical Society . . . **REGIONAL CHAIRMAN:** J. Malcolm Masten, M.D., 1051 R Street, Fresno, California . . . **INSTITUTE FEE:** $15.00. For additional information contact Postgraduate Activities office, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5. **All California Medical Association members and their families are cordially invited to attend.**

In Memoriam

BAIRD, BERNARD. Died in San Francisco, February 17, 1961, aged 49, of heart disease. Graduate of the University of Tennessee College of Medicine, Memphis, 1944. Licensed in California in 1946. Doctor Baird was a member of the Mendocino-Lake County Medical Society.

✤

BRAINARD, FOREST JOHN. Died February 13, 1961, aged 71. Graduate of State University of New York College of Medicine, Syracuse, New York, 1916. Licensed in California in 1938. Doctor Brainard was a member of the Los Angeles County Medical Association.

✤

DOLLEY, FRANK STEPHEN. Died in Los Angeles, February 25, 1961, aged 76. Graduate of Bowdoin Medical School, Brunswick-Portland, Maine, 1911. Licensed in California in 1914. Doctor Dolley was a member of the Los Angeles County Medical Association.

✤

ERIKSON, GEORGE V. Died January 12, 1961, aged 49. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1948. Licensed in California in 1948. Doctor Erikson was a member of the Los Angeles County Medical Association.

✤

FARRINGTON, E. DWIGHT. Died March 2, 1961, aged 66. Graduate of University of California School of Medicine, Berkeley-San Francisco, 1923. Licensed in California in 1923. Doctor Farrington was a member of the Los Angeles County Medical Association.

✤

GRAESER, HENRIK SOFAS. Died in Sacramento, February 26, 1961, aged 52. Graduate of the University of Arkansas School of Medicine, Little Rock, 1936. Licensed in California in 1937. Doctor Graeser was a member of the Yolo County Medical Society.

✤

GULL, HYMIE ARNOLD (H. A.). Died February 10, 1961, aged 46, of cancer. Graduate of the University of Minnesota Medical School, Minneapolis, 1951. Licensed in California in 1951. Doctor Gull was a member of the San Bernardino County Medical Society.

✤

HOMMEL, WESLEY J. Died March 13, 1961, aged 75. Graduate of Milwaukee Medical College, Wisconsin, 1909. Licensed in California in 1918. Doctor Hommel was a member of the Los Angeles County Medical Association.

✤

KRAUSE, ROBERT ALPHONSE. Died March 2, 1961, aged 76. Graduate of the College of Physicians and Surgeons, Los Angeles, 1922. Licensed in California in 1922. Doctor Krause was a member of the Los Angeles County Medical Association.

LIM, KWONG. Died in San Francisco, February 5, 1961, aged 46. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1941. Licensed in California in 1941. Doctor Lim was a member of the San Francisco Medical Society.

✤

MAXWELL, ALICE FREELAND. Died in Palo Alto, March 20, 1961, aged 70, of heart disease. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1915. Licensed in California in 1915. Doctor Maxwell was a member of the San Francisco Medical Society.

✤

NAFFZIGER, HOWARD C. Died in San Francisco, March 21, 1961, aged 76. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1909. Licensed in California in 1909. Doctor Naffziger was a retired member of the San Francisco Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✤

PICKWORTH, MAX EUGENE. Died February 14, 1961, aged 53, of heart disease. Graduate of the University of Minnesota Medical School, Minneapolis, 1931. Licensed in California in 1937. Doctor Pickworth was a member of the Santa Clara County Medical Society.

✤

PORTOGALLO, HENRY SALVATORE. Died January 10, 1961, aged 70. Graduate of Rush Medical College, Chicago, Illinois, 1922. Licensed in California in 1922. Doctor Portogallo was a member of the Los Angeles County Medical Association.

✤

ROOT, ROMEO R. Died in Corona, February 26, 1961, aged 90. Graduate of the University of Illinois College of Medicine, Chicago, 1902. Licensed in California in 1906. Doctor Root was a member of the Riverside County Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.

✤

SEYMOUR, ELEANOR C. Died February 12, 1961, aged 83. Graduate of the University of Southern California School of Medicine, Los Angeles, 1903. Licensed in California in 1904. Doctor Seymour was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✤

WILLIAMS, A. WYLLYS. Died in Inglewood, March 4, 1961, aged 64. Graduate of Northwestern University Medical School, Chicago, Illinois, 1923. Licensed in California in 1925. Doctor Williams was a member of the Los Angeles County Medical Association.

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

THE DEPARTMENT'S reactivated Ad Hoc Advisory Committee on Prophylaxis of Poliomyelitis has recommended shortening of the time interval between Salk vaccine injections in order for persons to have the minimum of three injections before the early summer start of the poliomyelitis season. The group added that the same compressed schedule should be used in case of a threatening epidemic.

The interval between the first and second injections can be shortened to as little as 7 to 14 days with the third a month later. It was considered essential that at least three injections be given before the summer months, followed by a fourth inoculation a year later.

The committee strongly urged vaccination of all unprotected persons before summer, and reemphasized the increased potency of the standard Salk vaccines which have shown an effectiveness up to 95 per cent in the younger age groups.

Several recommendations were made concerning the surveillance of poliomyelitis cases during an epidemic and during the nonepidemic period. These included greater emphasis on laboratory investigation of cases and an expansion of laboratory facilities in anticipation of the future introduction of oral vaccine. It will be more important at that time than ever, said the advisors, to pursue individual case investigations and to identify prevalent strains of poliomyelitis and other enteroviruses which cause paralysis in the community.

An analysis of poliomyelitis cases in California shows a steady downward trend in the number of paralytic cases in recent years. The majority of cases now occur in the unvaccinated persons. The fact that there remains a substantial number of cases is largely a failure to reach the nonimmunized population. It is not a failure of the vaccine.

The effectiveness of poliomyelitis vaccine is substantiated by the laboratory findings. The laboratory has been able to show evidence of poliomyelitis infection by virus isolation in a high proportion of persons who have had either no vaccine or an inadequate number of doses. Conversely, in persons who have received three or more injections of Salk vaccine one is less likely to find definitive evidence of poliomyelitis infection by virus isolation. A higher proportion of the fully vaccinated persons show evidence of infection with other enteroviruses. On both epidemiological and laboratory grounds, therefore, it can be shown that Salk vaccine is and has been a highly effective tool to combat poliomyelitis.

Considered in detail was the anticipated use of oral vaccine. It was reported that the oral vaccine will not be available in any quantity in 1961, or perhaps even in the following year. The committee recommended that staff of the State Health Department work out a plan to cooperate with the U. S. Public Health Service for the use of oral vaccine in the face of an epidemic. This relates to a proposal by the National Advisory Committee that the Public Health Service have a reserve of vaccine available for such use throughout the country.

Some committee members felt that experimental use of vaccine in California before its being licensed should be encouraged for research purposes by competent investigators. It was agreed, however, that the State Health Department should have knowledge of, and approve, any such research use of live poliomyelitis vaccine, and that any such proposals be discussed in advance by the advisory group. The committee felt it would not be advisable at present to utilize oral vaccine in limited areas for certain population groups before its becoming a licensed product, but that it would be preferable to concentrate on well-controlled studies to supplement research now in progress in other parts of the country.

The committee recommended intensification of the use of Salk poliomyelitis vaccine, stressed its effectiveness and made a strong plea for use of this vaccine to its fullest before the coming poliomyelitis season.

Summing Up

NOW THAT MY YEAR as President of the Woman's Auxiliary to the California Medical Association is rapidly drawing to a conclusion, there comes the traditional time for assessing or "summing up" the year's activities. Permit me, then, in this article, to summarize briefly and partially the record—incomplete as it is—to date.

Two important committees were formed this year, one on the Problems of the Aging, the other the Woman's Auxiliary to the Students' American Medical Association. The committee on the Problems of the Aging has been and continues to be in the spotlight on medical legislative affairs. In time, we hope to see the results of the work of this committee through its program of educating the nonprofessional people in our communities.

The Woman's Auxiliary-Students' American Medical Association Committee has progressed beautifully and has exhibited great enthusiasm. It is really exciting and refreshing to be of assistance to such eager, intelligent young people—our future members—who are so eager to absorb every bit of information that the Woman's Auxiliary to the California Medical Association can give them. This, I am sure, will make for better informed and helpful doctors' wives.

While these two new committees are important, the attention they have been given has not detracted from the work of many another active committee. Progress has indeed been made in all the committees' activities.

The American Medical Education Foundation committee is continuing its work throughout the state with many new ideas for raising monies for this very important project. The Christmas Card idea,* originated by the Orange County Auxiliary, has been adopted by many counties this past year. Silent auctions and proceeds from county social affairs have also become popular as a means of raising monies. This should be a banner year for this committee.

As you can well surmise, the Legislation chairman was certainly most active and busy, since this was an election year. The chairman assisted the medical profession in the promotion of legislation beneficial to us and kept the auxiliaries informed on legislative matters by means of letters and many talks.

The Health Careers Committee has broadened its objectives to include recruitment not only of nurses, but of persons in fields closely allied with medicine, such as medical technologists and physical therapists. The Health Careers Conference Day Program, instigated by the San Diego Auxiliary, is being adopted by many of the counties.

At the suggestion of the President of the California Medical Association, Dr. Paul D. Foster, a new plan for county visits has been adopted this year. This plan provides that the President of the Auxiliary will visit those counties in the southern part of the state, while the President-elect visits the northern counties. Since I had already completed the majority of my visits to the northern counties before this plan was adopted, it could not be completely implemented. At any rate, Mrs. Lawrence Custer, the President-elect, did visit three of the northern counties. This plan, I am sure, is a progressive and practical one and should prove beneficial both to the members and as a "training ground" for the President-elect.

I am most pleased and delighted to announce that the Auxiliary now has a home of its own—an office in the California Medical Association building in San Francisco. My very sincere thanks and appreciation to the California Medical Association. We love you for this!

This, then, is a partial review of the activities of your Auxiliary during the past year. At this time, space does not permit a complete review of all of the activities of the many other committees and the wonderful work they have done. Suffice it to say that all of the committees (Membership, Program, Community Service, GEMS, to mention but a few) have performed outstanding jobs. I am deeply grateful.

I am most grateful for the many courtesies ex-

*Names of A.M.E.F. contributors appear on a Christmas card and each member of the county medical society receives one of the cards. Many hours of tedious addressing are saved and money is made available for a most worthwhile cause—the A.M.E.F.

tended to me at all of my visits not only by the auxiliaries, but also by the members of the California Medical Association. A sincere thanks to those counties that had combined meetings, and to the counties who changed their regular meeting dates to accommodate me. I am most appreciative! It has been a privilege to have the opportunity to meet the members personally and to witness the excellent work being done at the county level. It has been a most stimulating and inspiring experience. I left the counties with the impression that I had gained much more than I had contributed. Not only were the meetings inspiring, but it made me so proud and pleased to witness the friendliness and cooperation that existed between the members of the auxiliaries, and between the auxiliaries and their parent organizations—the County Medical Societies. This spirit of friendship is one of the objectives of the Auxiliary.

The year has passed all too quickly—not alone for me, but I am sure for all the officers. An Auxiliary year is not something you can see—it is that intangible "something" that one experiences and "feels" through participation. An Auxiliary year means, amongst so very many other things, community service through leadership, friendliness, new information learned and passed on, and participation in the many Auxiliary projects. As our size has increased, our committees, our objectives, our activities and our responsibilities have mounted.

While much has been accomplished, there remains so very much to be done; while new committees and new projects have been inaugurated, there remains the great task to further implement these. Certainly, nothing could have been achieved without the devotion and dedication with which the committees addressed themselves to their assignments. To the committees, to the Executive Committee, to the Board of Directors, to the California Medical Association Advisory Board, to Mr. Jack Collins and his staff, and to the membership at large, I now pay my respects, my appreciation and my thanks for many jobs so well done.

Now I feel secure in the knowledge that the stewardship of your Auxiliary will be in good hands in the future. Your officers, whoever they may be, and your Board of Directors are devoted and dedicated Auxiliary members who will work diligently and conscientiously and give generously of their time and effort.

MRS. SAMUEL GENDEL
President, Woman's Auxiliary to the California Medical Association

AUXILIARY'S PROGRAM OF ENTERTAINMENT

Exciting plans are in the offing for the members and delegates attending the 31st C.M.A. Auxiliary Convention in Los Angeles on April 30, May 1 and 2, 1961. Under the capable chairmanship of Mrs. Samuel K. Bacon, and co-chairman Mrs. Albert F. Stelhorn, the committee has made arrangements to insure that everyone is made welcome. The hospitality center where conventioners may rest and have a cup of coffee or a chat with a friend will again be available.

On Sunday evening, April 30, in the Cocoanut Grove, an excellent dinner, entertainment, and dancing to music by Freddy Martin and his Orchestra will be provided at the C.M.A. Presidents' Party in honor of Dr. Paul D. Foster, C.M.A. President, and Mrs. Samuel Gendel, president of C.M.A. Auxiliary.

Climaxing the busy convention schedule will be the annual luncheon honoring our new state president, Mrs. Lawrence Custer of San Francisco. Harp music will fill the air during luncheon to provide background music for informal modeling by the Auxiliary's own glamour girls. Highlighting the affair and carrying out the theme will be special entertainment by Mr. John Raitt, star of stage, screen, television and concert.

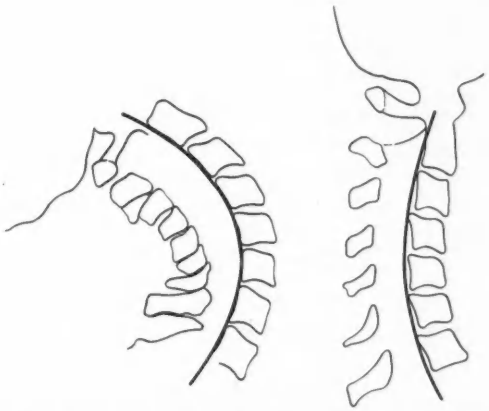
Mrs. Samuel Gendel, retiring state president, will preside at the luncheon and special guests will be A.M.A. President E. Vincent Askey and Mrs. Askey, past presidents of the Auxiliary and members of the State Advisory Board and their wives: Dr. and Mrs. Paul D. Foster, Dr. and Mrs. Warren Bostick, Dr. and Mrs. M. N. Hosmer, Dr. and Mrs. Samuel R. Sherman, and Dr. and Mrs. Malcolm C. Todd.

Reservations for the luncheon ($5.50 per person) may be made through Mrs. Jack W. Bills, 6535 Langdon Ave., Van Nuys. Checks may be made payable to C.M.A. Auxiliary.

Letters to the Editor...

IN MY ARTICLE "Cineradiographic Studies of the Normal Cervical Spine," which appeared in the November 1960 issue of CALIFORNIA MEDICINE, Figure 2 diagraming the curve produced along the posterior aspect of the vertebral bodies in flexion and extension has been criticized by some readers. The offset which normally occurs between the vertebral bodies in flexion was not represented in the diagram.

The two diagrams here supplied demonstrate this offset as it occurs in flexion and in extension.



Left: Smooth curve derived along the posterior aspects of the cervical vertebral bodies in extension, demonstrating a minimal offset of one vertebral body on the other. *Right:* Moderate offset of the vertebral bodies of the cervical spine in flexion in the normal individual. Smooth curve is derived along high points of the vertebral bodies.

The criticisms have related to the misinterpretation of such offset in the normal individual as indicative of subluxation. The curve which is derived along the posterior aspect of the bodies can be observed to be drawn from the highest points of the vertebral bodies.

MALCOLM D. JONES, M.D.

San Francisco

"C.P.S.-Blue Shield"

THE WELL WRITTEN Editorial on "C.P.S.—Blue Shield" appearing in your January issue is noted. The author is to be commended for his candor in writing ". . . we find C.P.S. beset with a number of problems which a knowledgeable observer might have expected to see solved some years back." But then, alas these problems are lightly glossed over with the sentence "Details need not be gone into here. . . ."

Lest the JOURNAL present only one side of the question, I believe it would be fair to note some of these problems, with which many are not familiar. As a founder-member of C.P.S. and as a former secretary of the California Medical Association, I believe I can speak with some knowledge of the circumstances:

1. C.P.S. was organized in 1939 to provide a sickness service physician prepayment mechanism for low income groups.

It exists because of:

(a) A continuous *subsidy* by the medical profession via service-plan benefits (indemnity-plan benefits would be better for all concerned, but would be hard to sell in competition with regular insurance companies), and

(b) A continuous *subsidy* by the public.

C.P.S. originally was planned to provide *medical benefits* only—California Blue Cross was supposed to provide necessary *hospital* benefits. But friction concerning promotion, costs and personnel prevented such sensible joint effort.

Now C.P.S. sells both medical and hospital coverage, and administers various federal and state plans, conducting a total annual business of about $57,000,000! And it is no longer confined to low income groups.

2. Certain portions of the C.P.S. schedule pay, and have for many years paid, for services not rendered. Other portions are administered in a most unequal manner, disparate fees being paid for identical services depending upon whether they are performed in hospital buildings or medical buildings.

3. Portions of the 1939 schedule have been increased only about 25 per cent since that time. Even the most casual observer will admit that medical costs have increased more than 25 per cent in the twenty-two year period. Correction would seem to be long overdue.

4. Many questions are unanswered.

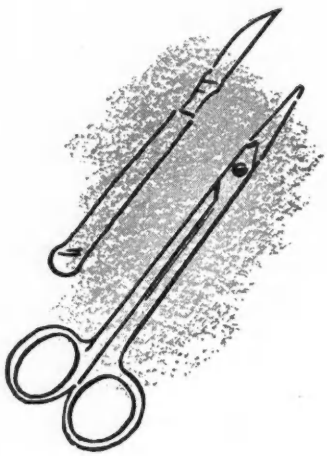
Should we, the medical profession, be in the multimillion dollar insurance business or should we stick to our professional last? It seems to me that a good point can be made for a pilot or model program in sickness service prepayment fields, but I suspect that many of our members doubt the wisdom of the profession being in competition with the insurance industry.

Is this one of the reasons why only 14,500 physi-

cians out of the more than 22,000 licensed physicians in the state are members of C.P.S.?

Would cooperation be better than competition? The California Medical Association represents organized medicine in this state; the voluntary health insurance agencies doubtless have, or can be encouraged to have, an organization too. Cooperation between the medical profession and the insurance industry on a statewide basis should lead to the more constructive evolution of sound indemnity-type programs for a majority of the citizens. Service type programs could and should be made available to those for whom C.P.S. was originally founded, the lower income groups, and certain other deserving persons irrespective of age.

L. H. GARLAND, M.D.



INFORMATION

Control of Cancer Quackery

THE 1959 CALIFORNIA LEGISLATURE, in Senate Bill No. 194, gave the Department of Public Health responsibility for the enforcement of a program to protect the public from unorthodox or unproven methods for the diagnosis, treatment or cure of cancer.

To assist and advise the department, this anti-quackery law authorized gubernatorial appointment of a 15-member Cancer Advisory Council consisting of nine physicians and surgeons, two representatives from cancer research institutes, three others who are not physicians and surgeons and the Director of the Department of Public Health. At the first meeting in January, 1960, John W. Cline, M.D., was elected chairman of the council for the ensuing year.

The legislation requires anyone offering an agent for the diagnosis or treatment of cancer to furnish samples, on demand, for investigation or testing by the department. When it is established by scientific and legal processes that this agent is misrepresented or ineffective, the department may order that its use be discontinued. If this order is not complied with, under certain other circumstances, the department may prosecute.

Within the Department of Public Health a Cancer Diagnosis and Therapy Evaluation Unit has been established to furnish staff service to the council and to carry on the antiquackery program. This unit is staffed by K. F. Ernst, M.D., as head, Mr. J. Richard Jackson as field representative and a secretary. During the year this unit has been in existence, one clinic and one remedy have been investigated and further action by the Attorney General is now awaited.

The department has received pledges of support from the deans of all the schools of medicine in California, some individual physicians and other scientists, State Boards of Examiners and other groups. Support of all practicing physicians and of all agencies in the state is needed and is earnestly solicited. This support may take any or all of the following forms:

(a) Whenever patients who have had treatment with unproven methods come to the attention of any physician, society, bureau or other agency, the Cancer Unit in the Department of Public Health should be notified and preliminary arrangements made for an interview. The patients should be asked to retain any letters, advertising or medicines they may have received in connection with the treatment.

(b) Historical notes to record methods of diagnosis, claims and details of treatment, name of the treatment and of the clinic or individual offering it and the cost of the treatment should be made while still fresh in the patient's mind. If it is suspected that the diagnosis of cancer is false, diagnostic studies to confirm the diagnosis or to show that it is incorrect should be performed.

(c) Objective findings for comparison with those before treatment, if known by the physician or stated by the patient, should be recorded.

(d) Autopsies on patients who die after treatment with unproven methods should be encouraged.

(e) Notification may be made by mail to the Cancer Unit, State Department of Public Health, 2151 Berkeley Way, Berkeley 4, or by telephone to THornwall 3-7900, Extension 321.

Factual or opinion testimony by physicians or other scientists regarding physical findings or the efficacy of a given remedy is of tremendous value when a case is being considered before a hearing officer.

$317,000 Settlement in Malpractice Case

ON DECEMBER 22, 1960, there was announced perhaps the largest settlement made in a malpractice case. After three weeks of trial, the case against a surgeon, two anesthesiologists and a hospital was settled for $317,000. (*Carvainis v. Montefiore Hospital for Chronic Diseases*, Supreme Court, N. Y. County, Index No. 11907-1957, Calendar No. 21461.)

The plaintiff was a 49-year-old housewife, the mother of four children. She entered the defendant hospital April 4, 1956, for a vaginoplasty. A spinal anesthesia was administered. Because the patient was decidedly obese, the lithotomy position was indicated. Evidence was produced at the trial along the following lines:

An excessive dose of anesthetic agent was administered; an unexplained very high level of insertion at T-10 was made. The operating table did not function until after it had been pushed, jerked, jostled and vigorously shaken in order to put it in the Fowler's position and to release the drop leaf. Each and every element would cause the anesthetic level to rise to an abnormally and undesired high level.

Respiratory difficulties arose, with a secondary cardiac arrest, and a thoractomy with heart massage was done. Although the heart responded after two

or three squeezes, spontaneous respiration did not return for an hour. The patient suffered anoxia, and although partially recovered, she is unable to walk without assistance, unable to dress, undress, bathe, wash herself or comb her hair. She can feed herself partially but has to be prodded to continue eating. She is incontinent of bowel and bladder unless these needs are attended to every three hours, day and night. She speaks slowly, haltingly, unresponsively and without intelligence or intellectual content. She has no memory, no human motivation, is emotionally insulated and unresponsive, and is without spirit or compassion. These conditions are irreversible.

Notes on Medical Liability

Medical Staff Rule Requiring Adequate Professional Liability Insurance

THE Joint Medicolegal Education Committee of the California Medical Association and the California Hospital Association has learned of many instances in which some members of a hospital medical staff carried inadequate professional liability insurance or none at all.

Medical staff organization was developed in the public interest in order for physicians to further their professional training, to assure each other of highly competent colleagues for consultation, and to better administer and discipline the medical care being rendered in a hospital, for which they are responsible.

Many medical and surgical procedures performed in a hospital call for the combined professional skills of several physicians. Each physician should be assured not only of the training and competence of all others, but also that his colleagues have in force adequate professional liability insurance. The welfare of your patients in the event of injury caused by another physician, is thus better protected, as is your own estate. The point should be emphasized that the uninsured or underinsured physician is a hazard to the other physicians on the staff due to the fact that in the event a suit joins a number of physicians, an increased burden may be placed on those who are adequately insured.

Recently, a questionnaire was sent to the 789 medical staff members of two large hospitals in a metropolitan area to ascertain whether they carried malpractice insurance and what the amount of their coverage was. Replies were received from 620 members or 78 per cent. No malpractice insurance was carried by three physicians. Nineteen carried coverage up to $5,000 and 27 had $15,000 limits. Approximately 15 per cent of those responding carried $50,000 limits or less.

The C.M.A.-C.H.A. Joint Medicolegal Education Committee recommended that hospital medical staffs require that every member of the staff shall annually file an informal statement with the secretary of the staff, telling the amount of professional liability insurance he is carrying and the name of the underwriting company. This information will be reviewed by the executive committee of the staff in order that all staff members may be assured that each member has reasonably adequate professional liability insurance in force. No permanent record need be kept of this information. The executive committee shall develop, from time to time, criteria (informal), by which to measure what shall be considered reasonable, adequate limits of coverage and shall advise the members of the medical staff of their recommendations.

These proposals are made in the interest of the profession and the public. They have been approved by the C.M.A. Council.

Joint Liability of Physician Cooperating With Another Discipline

A RECENT DECISION by a California court provides a timely reason to review the matter of the joint and several legal liability of physicians when they assist other disciplines.

Before an oral surgeon who is not a physician may admit a patient to a hospital for a procedure he is qualified to perform, a physician must give the patient a physical examination. An anesthesiologist ordinarily must administer the anesthesia. In some circumstances, the negligence of one may be shared by the other. For example: Who must recognize and treat pneumonia or drug reactions?

Dental work may be required because of infection, or an infection may result from it. The treating physician, in his effort to locate the cause of an illness that may be connected with the dental work, may be required to make careful x-ray examination of the area in which the dental work was done. The dentist may also be required to take x-ray films.

The District Court of Appeals, First District, Division 2, California, in December, 1959, handed down an opinion in the case entitled "William

George v. J. E. Matthews and W. C. Nixon, 346 Pac. 2d 863," in the course of which some interesting observations were made. The plaintiff, one William George, consulted Doctor Nixon, a physician, in December, 1952, and complained of a low backache which had persisted for several years. After examination, Doctor Nixon recommended that the plaintiff see a dentist. The plaintiff saw Doctor Matthews who found him suffering from pyorrhea and recommended extraction of all his teeth. On January 16, 21 and 28, and February 6, 1953, George's teeth were extracted by Doctor Matthews. On January 29, George had a low-grade fever, rash and rapid pulse. Doctor Nixon was called and administered an injection of penicillin. On February 6 and 16, another such injection was given. On February 20, George was suffering chills, consulted Doctor Nixon and was placed in the hospital. A diagnosis of septicemia was made. X-ray films were taken of George's jaw but the films did not show the portion of the jaw where, subsequently, some broken teeth roots were observed. On March 5, George was discharged from the hospital and he also relieved Doctor Nixon of any further responsibility for his care. George consulted another doctor. On March 11, he was again placed in the hospital. A diagnosis was made of septicemia with rheumatic arthritis and staphylococcal lobar pneumonia empyema. X-ray studies disclosed broken teeth roots in the upper jaw. Following removal of the broken roots, George's temperature became normal and his chest cleared.

An action was filed by George against both Doctor Nixon, his physician, and Doctor Matthews, his dentist, for alleged incompetent treatment in the extraction of his teeth. A judgment was rendered against both defendants in the trial of the case. Doctor Nixon appealed the decision. Upon review of the testimony, the court held that there was evidence produced that by reason of the prolonged infection and fever, the plaintiff's health was permanently impaired. There was evidence that the pockets of pus in the sockets of the broken teeth roots were the chief cause of the plaintiff's trouble. There was testimony that the standard of practice in San Francisco, the locality where this took place, required that:

1. With infection in the plaintiff's mouth, his physician should have given him an antibiotic injection on the day of or day before any teeth were extracted, and

2. The physician should have had adequate x-ray films of the patient's jaw taken when he was put in the hospital to determine whether broken roots remained.

There was evidence produced that it was the duty of the physician rather than the dentist to determine whether or not an antibiotic should be employed. Based on this evidence, the court submitted this matter to the jury under proper instructions. The Court of Appeals held that the jury's verdict holding, in effect, that both the dentist and the physician had not applied the proper standard of care in this case, was supported by the evidence. Incidentally, the jury awarded damages in the amount of $55,000.

This case would seem to impose upon a physician, a joint duty to almost supervise the completeness or adequacy of another professional man's work which may be the cause of or contribute to an illness which is being treated by the physician. A physician, therefore, who would undertake to do the necessary workup for a dentist, upon which that patient could be admitted to a hospital, may be required to continue an interest in that case to insure that side effects do not occur which are outside the professional competence of the dentist.

Physician Assisting Chiropodist

The Business and Professions Code of California, Section 2139, defines chiropody as follows:

> "Chiropody means the diagnosis, medical, surgical, mechanical, manipulative and electrical treatment of the human foot including the nonsurgical treatment of the muscles and tendons of the leg governing the functions of the foot. No chiropodist shall do any amputation or use an anesthetic other than local."

The State Board of Medical Examiners asked the attorney general two questions concerning this section:

> "1. Can Chiropodists perform any surgery on the muscles of the leg or foot?
>
> "2. Does the portion of Section 2139 beginning 'Chiropody means the diagnosis, medical, surgical, mechanical, manipulative, and electrical treatment of the human foot' mean that a Chiropodist can do any surgery on the human foot, not requiring a general anesthesia?"

The opinion of the attorney general is dated December 20, 1944, and is reported in 4 Opinions Attorney General 386. The attorney general, in the course of the opinion, ruled it to be his opinion that this legislation indicated that as to "the foot itself, surgical treatment was contemplated or permitted and that when the Legislature permitted treatment of the muscles and tendons of the leg governing the functions of the foot, it believed that it was necessary to limit the treatment of such enlarged area to nonsurgical treatment." The attorney general stated that "Chiropodists may perform

surgery on the foot, not involving amputation." He may not perform surgery on the muscles of the leg which govern the functions of the foot. The attorney general further stated: "We do not consider that the type of anesthetic has any relation to the extent or type of surgery that may be performed. . . . What surgery would amount to amputation, or what amount or type of anesthetic would be local, is a technical question of fact which must be determined by a person skilled in the art."

Should an anesthesiologist be called to assist a chiropodist who surgically treats a patient's foot, the anesthesiologist, since he is a physician, might well be held responsible to treat the side effects resulting from the surgical treatment or the use of drugs which are beyond the competence of the chiropodist.

Chiropodists Not Eligible for District Hospital Staff Membership

California Attorney General's Opinion No. 59-318, dated May 6, 1960, ruled:

"Chiropodists may not be admitted to membership on the medical staff of a local hospital district under the present legislation."

The attorney general's opinion was sought by an assemblyman.

After carefully reviewing the various statutes, the attorney general concluded that:

"Membership in the medical staff of a local hospital district is limited to physicians and surgeons and dentists."

It would appear that for a chiropodist to surgically treat a foot in a district hospital, the patient would need to be admitted by a staff physician. That physician would probably be held responsible for the medical needs of the patient arising outside the competence of the chiropodist.

Fortunately, problems of the nature discussed here do not arise with great frequency. But the inter-relationship between physicians and other disciplines is most necessary, important and frequent. An understanding of potential problems tends to decrease them.

Keep on TALKING
And LISTENING
And EAT, *too*

at the

SECOND GENERAL MEETING
C.M.A. ANNUAL SESSION, LOS ANGELES
MONDAY MORNING, MAY 1

Symposium on
Newer Diagnostic Methods of
Gastroenterology

The panel will consist of so many outstanding discussants that . . . . the question and answer period will carry over into the lunch hour . . . . so . . . . arrangements have been made for a

Special Luncheon

at which members of the audience who wish to may stay for a continued Question and Answer Period.

PRICE:
four dollars and six cents each

No tickets will be sold after April 25, 1961

USE COUPON BELOW FOR ORDERING TICKETS—
MAKE CHECKS PAYABLE TO AMBASSADOR HOTEL

MR. R. G. BOWMAN
Annual Session Coordinator
California Medical Association
693 Sutter Street
San Francisco 2, California

YES, I want to attend the luncheon of the General Meeting. Attached is my check for $..... ($4.06 each)

Please send me.....tickets.

....., M.D.

ADDRESS

CITY

NEWS & NOTES

NATIONAL · STATE · COUNTY

ALAMEDA

The Ninth Annual **Clifford D. Sweet Seminar,** sponsored by the medical staff of Children's Hospital of the East Bay, Oakland, will be held May 18, 19 and 20. The sessions on May 18 and 19 will be held at the Hotel Claremont in Berkeley. The third day of the pediatric seminar, May 20, will be devoted to things clinically at Children's Hospital of the East Bay.

Scheduled to give the Sweet Lecture is **Dr. Edward Pratt,** professor of pediatrics, Southwestern Medical School, University of Texas, Dallas. Dr. Pratt will speak on "Training Physicians for the Management of Behavior Disorders in Children."

Other guest speakers will include Dr. John Adams, professor of pediatrics, School of Medicine, University of California at Los Angeles, and Dr. William T. Mustard, pediatric surgeon, Toronto, Ontario, Canada.

* * *

The East Bay Rehabilitation Center for the treatment and restoration of the physically handicapped has formally opened in its new, specially designed quarters at Herrick Memorial Hospital in Berkeley. The center is the only one of its kind in northern California, attached to a modern general hospital, offering a comprehensive rehabilitation program to private patients, the official announcement said. Its purpose is to give early rehabilitation nursing care and therapy to lessen crippling after-effects and shorten length of disability for persons needing in-hospital care for conditions involving physical handicap. All medical, surgical, psychiatric and diagnostic facilities of Herrick Hospital are available to Center patients. Inpatient, outpatient and home care services are available. Patients may be admitted on referral from any responsible physician, the physician remaining in charge of the regimen for his patient.

Home care is available for patients who are unable to go to the Center for treatment. Several rate schedules exist in the Center, depending upon the program of care needed by the patient. They differentiate the acute short term patient who requires less comprehensive care from the severely disabled, long term patient who needs multiple services and frequent nursing supervision.

FRESNO

Design for Nursing in the '60's is the theme of the 1961 **California League for Nursing** convention to be held in Fresno, April 20 to 22.

Featured speakers will include Mrs. Margaret Giffen Ellsworth, former director, Department of Hospital Nursing, National League for Nursing; Dr. Robert Kroepsch, director, Western Interstate Commission on Higher Education; Arnold E. Joyal, president of Fresno State College; Neva Stevenson, consultant on practical nursing, NLN, and others.

The Student Nurses' Association of California will meet concurrently with CLN, and a joint session is planned for the afternoon of April 21, with Miss Marjorie Duvillard, R.N., director, Le Bon Secours School of Nursing, Geneva, Switzerland, discussing "Nursing in the World Community."

LOS ANGELES

Dr. Kenneth Sutherland has been given temporary appointment as Los Angeles County health officer by the Board of Supervisors. He began serving April 10, succeeding Dr. Roy O. Gilbert, who retired. Dr. Sutherland was once health officer of Orange County.

* * *

Dr. Paul D. Foster, president of the California Medical Association, was named Alumnus of the Year by graduates of the College of Medical Evangelists School of Medicine and was honored at a banquet last month by some one thousand physicians.

NAPA

The **Third Invitational Conference on Mental Disease** will be held at Napa State Hospital, Imola, California, May 20, 1961. The symposium will deal particularly with "Social Factors in Mental Disease." In the morning, there will be a discussion of the "Social Factors and the Hospital," and in the afternoon "Family Factors in Mental Illness."

Admission to the symposium is by invitation only. Further information may be obtained from Dr. David C. Wilson, Napa State Hospital, Imola, California.

SAN FRANCISCO

Opening of a western **office in San Francisco** to stimulate improvement of nursing education and nursing service in the region, has been announced by the **National League for Nursing.**

Mrs. Irene B. Miller, of New York, former director of the League's nurse recruitment program, will be director of the Western office. She had also been the agency's nurse recruitment field consultant in the region.

SANTA CLARA

Dr. David A. Hamburg, chief of the adult psychiatry branch of the National Institutes of Health, Bethesda, Maryland, has been appointed professor and executive head of the Stanford Medical School's department of psychiatry. He will assume his duties there next August 1. He succeeds Dr. Thomas A. Gonda, acting head of the department, who will be on sabbatical leave at Oxford University next year.

GENERAL

To make it possible for distinguished university professors to continue **research activities after arbitrary retirement** age, the Easter Seal Research Foundation has set up a system of awards to be known as Distinguished Service Awards for Professors Emeriti.

As stated by the Foundation's announcement, the new awards are intended "to encourage and facilitate continued research in the field of crippling by retired university professors who have demonstrated distinguished research competence prior to retirement."

First recipient of one of the awards is the noted obstetrician, Nicholson J. Eastman, M.D., of Johns Hopkins University, Baltimore, Md., who for two years will continue his study of the obstetrical background of cerebral palsy under the Easter Seal grant.

Awards will be made only to retired full professors who devote substantial time to research and who will have a continuing research opportunity in a university or other major research facility.

POSTGRADUATE
EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to Postgraduate Activities, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

STANFORD UNIVERSITY SCHOOL OF MEDICINE, PALO ALTO

Acute Myocardial Infarction. Saturday, May 13, 8:00 a.m. to 5:00 p.m. *For information contact:* Lowell A. Rantz, M.D., associate dean, Stanford Medical Center, Palo Alto.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Clinical Traineeships — Anesthesia, Dermatology and Pediatric Cardiology. Dates by arrangement. Minimum period—two weeks. Fee: Two weeks, $150.00; four weeks, $250.00.

Israel—Clinical Postgraduate Program (sessions to be held in Jerusalem and Tel Aviv). April 20 through 28. Thirty-two hours. Fee: $200.00.

Management of Trauma—Harbor Hospital. Friday and Saturday, May 19 and 20. Nine hours.*

Gerontology. Friday and Saturday, May 19 and 20. Twelve hours.*

Common Emergencies in Clinical Practice. Friday and Saturday, May 26 and 27. Twelve hours. Fee: $40.00.

Office Surgery. Saturday and Sunday, June 17 and 18.†

Dermatology in Clinical Practice. Tuesday, July 11. Six hours. Fee: $20.00.

Advanced Seminars in Dermatology (for Dermatologists). Wednesday through Sunday, July 12 through 16. University Conference Center, Lake Arrowhead. Fourteen and one-half hours. Fee: $150.00 (includes room and meals).

Infertility. Friday and Saturday, July 14 and 15.†

Advanced Seminar on Infertility. Sunday through Wednesday, July 16 through 19. University Conference Center, Lake Arrowhead.†

General Pediatrics. Wednesday through Sunday, August 2 through 6. University Conference Center, Lake Arrowhead. Sixteen hours. Fee: $150.00 (includes room and meals).

Endocrinology. Friday and Saturday, August 4 and 5.†

Advanced Seminars in Internal Medicine. Sunday through Wednesday, August 6 through 9. University Conference Center, Lake Arrowhead. Fee: $137.50 (includes room and meals).

For information on courses for physicians or ancillary personnel *contact:* Thomas H. Sternberg, M.D., assistant dean for Continuing Medical Education, U.C.L.A. Medical Center, Los Angeles 24. BRadshaw 2-8911, Ext. 7114.

*Fee to be announced.
†Hours and fees to be announced.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

General Surgery. Thursday and Friday, April 20 and 21. Fifteen hours. Fee: $50.00.

Ear-Nose-Throat. Thursday through Saturday, May 11 through 13. Twenty-one hours.*

Proctology. Thursday and Friday, May 18 and 19. Fourteen hours.*

Gastroenterology. Friday and Saturday, May 26 and 27. Fourteen hours.*

Eye Muscle. Thursday through Saturday, June 1-3. Twenty-one hours.*

Electrocardiography. Friday and Saturday, June 9 and 10. Fifteen hours.*

A Course in Psychiatry for Physicians in General Practice. Thursday through Saturday, June 15-17. Twenty-one hours.*

Cerebral Palsy. Thursday and Friday, June 29 and 30. Fourteen hours.*

Fundamental Practices of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Fee: $350.00.

For information on courses for physicians or ancillary personnel *contact:* Department of Continuing Medical Education in Medicine and Health Sciences, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

PRESBYTERIAN MEDICAL CENTER, SAN FRANCISCO

Problems in Therapy of Cardiac Disease. Sunday, April 9. Eight hours. Fee: $25.00.

Problems in Neurology and Neurosurgery. Saturday, May 6. Eight hours. Fee: $25.00.

Psychological Problems in General Practice. Sunday, May 21. Eight hours. Fee: $25.00.

Horizons in Surgery. Saturday, June 17. Eight hours. Fee: $25.00.

Conference on Strabismus. Wednesday through Friday. July 26 through 28. Limited enrollment. Fee: $100.00.

Contact: Arthur Selzer, M.D., program committee chairman, Presbyterian Medical Center. Clay and Webster Sts., San Francisco 15, WEst 1-8000, Ext. 303.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Hawaii Course. August 2 through 18. The USC School of Medicine will offer the 4th Postgraduate Refresher Course to be held in Honolulu and on board the S.S. Matsonia. (As a time and money saver, air travel is also possible.)

Cardiac Resuscitation. Each Wednesday by appointment, 4 to 6 p.m. USC Medical Research Building, Room 211, 2025 Zonal Avenue. Tuition: $30.00. (Each session all-inclusive.)

Basic Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

Advance Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Fifty-two issues: $85.00. Physicians may register at any time.

Contact: Phil R. Manning, M.D., Associate Dean and Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

Surgical Anatomy (Dissection, Lectures and Demonstrations):

Head and Neck. Monday and Wednesday, April 19 through May 31. Sixty-three hours. Fee: $75.00.

Clinical Traineeships available in clinical departments by arrangement with Postgraduate Division and Postgraduate Chairman of department involved. In addition to those listed other traineeships in other departments can be arranged. Eighty hours minimum. Limited enrollment. Begin when individually arranged.

1. **Anesthesia.** Six months. 250 to 300 hours. Fee: $350.00.
2. **Internal Medicine.** Two weeks to nine months.
3. **Pulmonary Diseases** (can be arranged).
4. **Traumatology.** One month. 160 hours. Fee: $125.00.
5. **Urology** (can be arranged).

For information contact: Office of the Dean, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-7241, Ext. 214.

CALIFORNIA MEDICAL ASSOCIATION

POSTGRADUATE COURSES (at the time of the Annual Session)

Clinical Neurology in cooperation with College of Medical Evangelists. White Memorial Hospital. Sunday, April 30, 9-12 a.m.; Monday and Tuesday, May 1 and 2, 2-5 p.m. Fee: $25.00.*

Office Gynecology in cooperation with USC School of Medicine. Los Angeles County Hospital. Saturday, April 29, 9-12 a.m. and 2-5 p.m.; Sunday, April 30, 9-12 a.m. Fee: $25.00.*

Use and Limitations of Laboratory Tests in cooperation with USC School of Medicine. Los Angeles County Hospital. Saturday, April 29, 9-12 a.m. and 2-5 p.m.; Sunday, April 30, 9-12 a.m. Fee: $25.00.*

Cardiac Resuscitation: in cooperation with USC School of Medicine. USC Research Building, Room 211, 2025 Zonal Avenue, Los Angeles 33. Section I: Saturday, April 29, 9 to 11 a.m.; Section II: Sunday, April 30, 2-4 p.m. (each Section is all-inclusive). Each Section is limited to 15 registrants from areas other than Los Angeles and San Francisco. Fee: $30.00, each Section.*

CALIFORNIA MEDICAL ASSOCIATION

POSTGRADUATE INSTITUTE—1961

Sacramento Valley Counties, June 30 and July 1, in cooperation with Stanford University School of Medicine, Tahoe Tavern, Lake Tahoe. *Chairman:* Joel T. Janvier, M.D., 3632 Marysville Road, Del Paso Heights.

* * *

AUDIO-DIGEST FOUNDATION

A nonprofit subsidiary of the C.M.A., offers (on a subscription basis) a series of six different hour-long tape recordings covering general practice, surgery, internal medicine, obstetrics and gynecology, pediatrics and anesthesiology. Designed to keep physicians posted on what is new and important in their respective fields, these programs survey current national and international literature of interest and contain selected highlights of on-the-spot recordings of national scientific meetings, panel discussions, symposia, and individual lectures. For information contact Mr. Claron L. Oakley, Editor, 1919 Wilshire Blvd., Los Angeles 57, HUbbard 3-3451.

*Chartered buses for Registrants will leave the Ambassador Hotel at 8:00 a.m. each morning.

Medical Dates Bulletin

APRIL MEETINGS

ALAMEDA COUNTY TUBERCULOSIS, HEART AND CANCER ASSOCIATION and the ALAMEDA-CONTRA COSTA ACADEMY OF GENERAL PRACTICE Second Annual Joint Medical Symposium on "A Practical Approach to Current Clinical Problems." Wednesday, April 19, 1:45 to 5:00 p.m., Kaiser Center Auditorium, 300 Lakeside Drive, Oakland. *Contact:* J. Evans Morrison, M.D., publicity chairman, 1480 Fruitvale Avenue, Oakland.

LOS ANGELES COUNTY TUBERCULOSIS AND HEALTH ASSOCIATION in cooperation with UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF EDUCATION "Workshop on the Techniques of Teaching Diseases of the Chest." Saturday, April 22, all day, University of Southern California Campus, Los Angeles. *Contact:* Richard S. Gaines, staff, 1670 Beverly Boulevard, Los Angeles 26. Phone: DUnkirk 8-3401.

CALIFORNIA MEDICAL ASSOCIATION Annual Meeting, Ambassador Hotel, Los Angeles. April 30 through May 3. *Contact:* John Hunton, executive secretary, 693 Sutter Street, San Francisco 2; or Ed Clancy, director of public relations, 2975 Wilshire Blvd., Los Angeles 5.

PACIFIC COAST OTO-OPHTHALMOLOGICAL SOCIETY ANNUAL MEETING. April 30-May 4. Riviera Hotel, Palm Springs. *Contact:* Al Miller, M.D., Secretary, 500 South Lucas Ave., Los Angeles 17.

MAY MEETINGS

SOLANO COUNTY HEART ASSOCIATION First Annual Postgraduate Course for Physicians, Part II. Tuesday, May 2, 8:00 to 10:00 p.m., Casa de Vallejo Hotel, Vallejo. *Contact:* A. E. Chappell, M.D., president, 630 Tennessee Street, Vallejo.

LOS ANGELES COUNTY HEART ASSOCIATION Annual Meeting, May 3, 12:00 noon to 2:00 p.m. Pacific Ballroom, Statler Hilton Hotel, Los Angeles. *Contact:* Willard J. Zinn, M.D., chairman, Professional Education Committee, 2405 W. 8th Street, Los Angeles 57.

CALIFORNIA CONFERENCE OF LOCAL HEALTH OFFICERS Semi-Annual Meeting, May 4 and 5, Los Angeles. *Contact:* Donald G. Davy, M.D., State Department of Public Health, 2151 Berkeley Way, Berkeley 4.

HAWAII MEDICAL ASSOCIATION ANNUAL MEETING. May 4-7. Honolulu, Hawaii. *Contact:* Lee McCaslin, Executive Secretary, 510 So. Beretania, Honolulu 13.

LONG BEACH SURGICAL SOCIETY, Fourth Annual Clinic Day. May 10. The Petroleum Club, 3636 Linden Ave., Long Beach. *Contact:* Robert T. Fox, M.D., secretary, 3712 Atlantic Avenue, Long Beach 7.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS (for members and invited guests). May 10-12. Del Monte Lodge, Pebble Beach. *Contact:* William J. Engel, M.D., Secretary-Treasurer, Cleveland Clinic, 2020 E. 93rd St., Cleveland 6, Ohio.

NEVADA CHAPTER AMERICAN ACADEMY OF GENERAL PRACTICE. May 18-20, Riverside Hotel, Reno, Nevada. *Contact:* John M. Watson, Secretary, 1845 Prater Way, Sparks, Nevada.

MEDICAL STAFF OF CHILDREN'S HOSPITAL OF THE EAST BAY Ninth Annual Clifford Sweet Seminar. May 18, 19 and 20. Hotel Claremont, Berkeley, and Children's Hospital of the East Bay. *Contact:* Seymour J. Harris, M.D., chairman, Lectureship Committee, 401 29th Street, Oakland 9.

CALIFORNIA HEART ASSOCIATION Annual Meeting and Scientific Session. May 19 through 21, Disneyland Hotel, Anaheim. *Contact:* J. Keith Thwaites, Exec. Director 1370 Mission Street, San Francisco.

AMERICAN ORTHOPAEDIC ASSOCIATION (members and guests). May 22-25. The Ahwahnee Hotel, Yosemite. *Contact:* Lee Ramsay Straub, M.D., Secretary, 535 E. 70th St., New York 21.

AMERICAN UROLOGICAL ASSOCIATION, INC. May 22-25. Biltmore Hotel, Los Angeles. *Contact:* Mr. William P. Didusch, Executive Secretary, 1120 N. Charles St., Baltimore 1.

MEMORIAL HOSPITAL OF LONG BEACH, Third Annual Medical Staff Symposium. May 24. New Memorial Hospital, 2801 Atlantic Ave., Long Beach 6. *Contact:* George X. Trimble, M.D., secretary, Memorial Hospital of Long Beach.

SUMMER AND FALL MEETINGS

LOS ANGELES ACADEMY OF GENERAL PRACTICE SYMPOSIUM. Wednesday, June 7, 9:00 a.m. to 5:00 p.m., Statler Hotel, Los Angeles. *Contact:* Hammond S. Horton, M.D., 845 Foothill Boulevard, La Canada, California.

WESTERN BRANCH, AMERICAN PUBLIC HEALTH ASSOCIATION Annual Meeting (joint with U. S.-Mexico Border Public Health Association). June 26 through 29. El Cortez Hotel, San Diego. *Contact:* Robert E. Mytinger, M.P.H., director, Executive Office Western Branch, APHA, 693 Sutter Street, San Francisco 2.

NEVADA STATE MEDICAL ASSOCIATION 58th Annual Meeting and 11th Annual Conference of the Reno Surgical Society. August 23-26. Reno, Nevada. *Contact:* Mr. Nelson B. Neff, Exec. Secretary, Nevada State Medical Association, 506 Humboldt St., Reno.

ST. JOHN'S HOSPITAL Postgraduate Assembly. September 14 through 16. St. John's Hospital, 1328 22nd St., Santa Monica. *Contact:* John C. Eagan, M.D., director, 1328 22nd St., Santa Monica.

WASHINGTON STATE MEDICAL ASSOCIATION Annual Convention. September 17-20. Olympic Hotel, Seattle, Wash. *Contact:* R. W. Neill, 1309 7th Ave., Seattle.

SAN FRANCISCO HEART ASSOCIATION 31st Annual Postgraduate Symposium. September 27 through 29, St. Francis Hotel, San Francisco. *Contact:* Lawrence I. Kramer, Jr., executive director, 259 Geary Street, San Francisco 2.

CALIFORNIA SOCIETY OF INTERNAL MEDICINE Annual Meeting. September 29 through October 1. Hotel del Coronado, Coronado. *Contact:* Philip L. Pillsbury, M.D., secretary-treasurer, 350 Post Street, San Francisco 8.

WESTERN INDUSTRIAL MEDICAL ASSOCIATION Western Occupational Health Conference, October 6 and 7, Biltmore Hotel, Los Angeles. *Contact:* B. M. Brundage, M.D., Medical Director, Atomics International, P. O. Box 309, Canoga Park, Calif.

LOS ANGELES COUNTY HEART ASSOCIATION Professional Symposium. October 11-12. 9 a.m.—5 p.m., Statler Hilton Hotel, Los Angeles. *Contact:* Manuel Siegel, Program Director, 2405 W. 8th St., Los Angeles 57.

CALIFORNIA ACADEMY OF GENERAL PRACTICE 1961 Scientific Assembly. October 15-18. Statler Hilton Hotel, Los Angeles. *Contact:* William W. Rogers, Exec. Secretary, 461 Market Street, San Francisco 5.

ST. JUDE HOSPITAL POSTGRADUATE ASSEMBLY, Fullerton, October 22, all day beginning at 8:30 a.m. *Contact:* B. L. Tesman, M.D., St. Jude Hospital, Fullerton.

AMERICAN SOCIETY OF ANESTHESIOLOGISTS, INC., October 22 to 27, Statler Hilton, Los Angeles. *Contact:* Mr. John W. Andes, executive secretary, 515 Busse Highway, Park Ridge, Illinois.

SAN DIEGO COUNTY HEART ASSOCIATION Eleventh Annual Symposium. San Diego Veterans War Memorial Building, October 27 and 28. *Contact:* O. M. Avison, executive director, 3545 Fourth Avenue, San Diego 3.

AMERICAN COLLEGE OF PHYSICIANS Southern California Region Annual Basic Science Lecture. Statler Hilton, Los Angeles, November 1, 6:30 p.m. *Contact:* George C. Griffith, M.D., Governor, Box 25, 1200 North State Street, Los Angeles 33.

SAN DIEGO COUNTY GENERAL HOSPITAL Fifteenth Annual Postgraduate Assembly. November 1 and 2. No registration fee. *Contact:* David E. Wile, M.D., chairman, San Diego County General Hospital, San Diego.

LOS ANGELES PEDIATRIC SOCIETY (of Los Angeles County Medical Association) Annual Brennemann Lecture Series. Ambassador Hotel, Los Angeles, November 8 and 9. *Contact:* Neil N. Litman, M.D., vice-president, 9209 Sixth Avenue, Inglewood 4.

AMERICAN COLLEGE OF CHEST PHYSICIANS Seventh Annual Postgraduate Course on Diseases of the Chest, December 4 to 8, 9 to 5 daily, Statler Hilton Hotel, Los Angeles. *Contact:* Mr. Murray Kornfeld, executive director, 112 East Chestnut Street, Chicago 11, Illinois.

THE PHYSICIAN'S *Bookshelf*

STAINING METHODS—Histologic and Histochemical—J. F. A. McManus, M.D., Professor and Chairman of Department of Pathology, University of Alabama Medical Center; and Robert W. Mowry, M.D., Professor of Pathology, University of Alabama Medical Center. Paul B. Hoeber, Inc., Medical Division of Harper & Brothers. 49 East Thirty-Third Street, New York 16, N. Y., 1960. 423 pages, $10.00.

This is a well organized, conveniently arranged handbook which describes nearly all conventional staining methods and also a good many useful special technics based upon specific chemical reactions in tissues, such as methylation, acetylation, certain reactions for carbohydrates and proteins and a variety of procedures for enzyme identification. The selection of methods has been made with good discrimination which has eliminated methods that are not satisfactory in the experience of the authors, who have worked with histochemical methods for many years. Adequate detail is provided for successful conduct of the procedures, without going into extensive discussion of mechanisms of reactions, although comment referable to the significance and reliability of various technics is provided.

This manual should be very useful in any tissue laboratory as an assembly of effective staining methods that might be employed in staining tissue structures of all kinds and in the identification of chemical substances that are subject to ready recognition in tissue sections.

ALVIN J. COX, M.D.

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FUNDAMENTALS OF CHILD PSYCHIATRY—Stuart M. Finch, M.D., Associate Professor of Psychiatry and Director of the Children's Psychiatric Hospital, University of Michigan School of Medicine. W. W. Norton & Company, Inc., 101 Poplar Street, Scranton 9, Pa., 1960.

This is a textbook on Child Psychiatry written essentially for the beginning student of this new and rapidly expanding field. The subject matter is well organized, conforms to well established concepts in the field and is essentially conservative in dealing with psychoanalytically derived insights of personality development and psychopathology. Discussion of organic factors in etiology will provide the general practitioner and pediatrician familiar ground from which to advance their understanding. Personality development is discussed in terms of psychosexual maturation (oral, anal, phallic, latency and adolescent phases) with little integration or reference to early object relationship and ego development into this maturational pattern.

At times the subject matter is oversimplified, as for example in defining primary and secondary process on page 19. While there is ample evidence that the functioning of the ego is understood in its defensive operations, there seems little evidence that the concepts of Hartman regarding adaptive functioning of the ego or of Erickson's description of ego modes and societal modalities have been integrated.

Likewise the important work of Piaget on intellectual functioning has not made an imprint upon the author's presentation. Chapter III dealing with parental psychopathology is excellent. The sections dealing with the various descriptive categories of psychopathology as defined by the American Psychiatric Association are handled in a craftsmanship-like fashion and will be generally useful in anchoring the reader's attention to an understanding of symptoms but such structure is achieved at the expense of some oversimplification. This adherence to descriptive nosology could give the impression that there exists in child psychiatry specific entities clearly separate from one another as there are for organic diseases. I was disappointed to see no mention of the syndrome of psychogenic megacolon and school phobia, both of which are becoming more commonly recognized these days. In discussion of psychosis of children, ample reference is made to Kanner and Mahler but no reference to the oft debated work of Bender. A section on treatment and environmental manipulation is well done. A beginning resident will find much of value here. Even with the shortcomings mentioned this is one of the most useful texts available in child psychiatry.

This book will interest the medical student, parent educator, the general practioner, pediatrician and beginning psychiatric resident. A bibliography is appended.

JUSTIN D. CALL, M.D.

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MEDICAL AND BIOLOGICAL RESEARCH IN ISRAEL—Moshe Prywes, editor. Published by The Hebrew University of Jerusalem and Hadassah, The Women's Zionist Organization of America, 1960. Obtainable through Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y. (for the Americas). 562 pages, $8.00.

In this book printed in English, is presented the first survey of the medical and urologic research done in Israel.

There are 63 contributors. The achievements, as well as the many problems remaining to be solved are discussed.

The contents are divided into three parts: Part I, introduction; Part II, regional and applied research; and Part III, research of a general nature. Publications concerning both fundamental and applied research are included in this survey.

Even though Isarel is a small country with a population of approximately 2,000,000, a survey such as this one represents a very difficult task. It is emphasized that fundamental research is not a luxury, but that the higher the quality of the fundamental research the better the quality of applied research. It is anticipated that science will play a major role in the future progress of Isarel.

Some of the subjects presented in detail are as follows: Public health and applied research, plant sciences applied to agriculture, animal husbandry, industrial aspects of biological research, experimental biology, experimental and clinical research in medical disciplines, botany, zoology, and studies on the history of biology and medicine.

Anyone desiring to learn about the detailed scientific accomplishments of a young, vigorous, small country will find much of interest in this one comprehensive, concise volume.

PSYCHOLOGY OF DEAFNESS, THE—Sensory Deprivation, Learning, and Adjustment—Helmer R. Myklebust, Northwestern University. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 393 pages, $7.75.

As noted in the preface, this book is written primarily as a text for advanced courses in audiology, language pathology, special education and psychology. Any physician, however, who has one or more deaf patients in his care would do well to spend some time in perusal of this excellent summary of research on the many problems of behavior, learning and personality directly related to and commonly associated with deafness.

In the light of present knowledge sensory-neural deafness is not amenable to medical or surgical treatment. There is considerable need, therefore, for the physician directing the management of the deaf child or adult to familiarize himself with the complex processes of education and rehabilitation.

The first three chapters of Myklebust's book present a succinct review of fundamental information about the hearing process, the nature of hearing loss, and basic considerations in the measurement of hearing. Chapter 4 presents an extremely cogent, if abbreviated, discussion of the relationships between sensory deprivation and behavior.

Succeeding chapters discuss the relationships between deafness and mental development, emotional adjustment, motor functioning and social maturity; language and language development, speechreading and speech, and read and written language. The final chapters are devoted to an exploration of relationships between seeing and hearing, other handicaps frequently associated with deafness; and interests, aptitudes and special abilities.

Readers unfamiliar with the statistical argot of contemporary texts in psychology may become easily lost in several sections of the book. Myklebust has, however, followed a pattern which other writers in the psychological literature might well emulate in that each section contains a succinct summary of research findings with clear interpretations and discussion of implications for management.

The major shortcomings of the book are generally not the fault of the author, since with few exceptions they arise from the inadequacy of some of the research on which he had to depend. It is regrettable that the level of scholarship presented in the writing of this book was not practiced in the research efforts of all of the other writers presented. Nonetheless we can hope that this book will hasten the demise of many hoary half-truths and frank falsehoods which have surrounded the field of education and rehabilitation of the deaf for countless generations.

RICHARD M. FLOWER, Ph.D.

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ATLAS OF CLINICAL HEMATOLOGY—Katsuji Kato, Ph.D., M.D., Professor of Physiology (Hematology), Tokyo Medical College. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 296 pages, $25.00.

This is an excellent atlas. The various cells of the blood are superbly illustrated. Unfortunately, drawings rather than actual photographs are used. In most instances the drawings show the cells as they actually appear in blood smears but there are some cells which are not so well depicted, e.g., some of the cells in infectious mononucleosis. The author of the atlas is a proponent of the monophyletic scheme of hemocytogenesis and as such uses terminology which differs some from that used by the supporters of the polyphyletic theory. In spite of the few defects in the atlas, it is the most complete and thorough atlas of the blood with which this reviewer is familiar. It should be of considerable value as a source of reference in any laboratory in which blood cells are being studied.

JOHN S. LAWRENCE, M.D.

PROGRESS IN NEUROLOGY AND PSYCHIATRY—An Annual Review—Volume XV—Edited by E. A. Spiegel, M.D., Professor and Head of the Department of Experimental Neurology, Temple University School of Medicine, Philadelphia. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 619 pages, $12.75.

Volume XV of the annual review of Progress in Neurology and Psychiatry (Editor: E. A. Spiegel) again represents an attempt to abstract a massive number of publications relating to basic neurologic sciences, clinical neurology, clinical neurosurgery, and psychiatry. It is a good reference source for almost all of the current work relating to diseases and function of the nervous system, neuropharmacology, neurophysiology, and the behavioral sciences. The volume probably has major appeal to those dealing with diseases of the nervous system or those in psychiatry, but it will also be of considerable value to those interested in the impact of the newer drugs on brain and mind function as well as those interested in the neurologic aspects of many systemic diseases in children and adults. While the volume may thus enjoy a rather wide utility, it can be moderately criticized, as can all such review works, because of the failure to offer any critical evaluation of what has been abstracted and the failure to weigh discordant viewpoints which may appear on consecutive pages.

This annual review volume should be available to all practitioners of neurology and psychiatry, those working in the basic science fields related to the nervous system and behaviour, and, particularly, for trainees in any of these areas.

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PSEUDOMONAS AERUGINOSA INFECTIONS—Claude E. Forkner, Jr., M.D., Assistant in Medicine, Cornell University Medical College, New York, N. Y.; formerly, Assistant in Medicine, Harvard Medical School; formerly, Clinical Associate, General Medicine Branch, National Cancer Institute, National Institutes of Health, Bethesda, Maryland. Modern Medical Monographs 22—Irving S. Wright, M.D., editor-in-chief, and Richard H. Orr, M.D., consulting editor. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1960. 104 pages, $5.25.

Based on some 465 references the author compiled a comprehensive review of available information on Pseudomonas infections. In view of the increasing frequency of Pseudomonas infections in debilitated patients receiving antineoplastic or antimicrobial therapy the review is timely, and it appears reasonably complete. Perhaps its greatest deficiency is the lack of any critical appraisal on the author's part and the lack of any specific recommendations for therapy, based on the author's own experience. It is also regrettable that in some places the author reiterates statements of the literature which must, at the present, be deemed largely misleading. Thus, for instance, he states that endocarditis caused by Pseudomonas aeruginosa "should be treated immediately with polymyxin B" although virtually the only cures of this disorder were achieved by surgical removal of the infected material or tissue. On the whole, however, this book will be valuable for any hospital library to direct physicians' attention to this formerly infrequent problem and aid them in diagnosis and treatment.

ERNEST JAWETZ, M.D.

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ARTEFACTS AND HANDLING AND PROCESSING FAULTS ON X-RAY FILMS—Prof. Dr. E. A. Zimmer, Berne, Switzerland. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 67 pages, 128 figures, $5.75.

With the increasing use of roentgenography for medical, dental, veterinary, industrial and artistic purposes, increasing appreciation of artefacts produced by handling and processing is merited. This work summarizes many common and uncommon artefacts and should be in the library of all those using roentgenographic methods extensively. The illustrations are in both black and white, and color.

OUTLINE OF PATHOLOGY—John H. Manhold, Jr., D.M.D., M.A., F.A.C.D., Professor, and Director of Oral Diagnosis and Pathology for the College of Dentistry, Seton Hall College of Medicine and Dentistry; Attending Pathologist, Jersey City Medical Center; and Theodore E. Bolden, D.D.S., M.S., Ph.D., Assistant Professor of Oral Diagnosis and Pathology, College of Dentistry, Seton Hall College of Medicine and Dentistry; and Attending Pathologist, Jersey City Medical Center. W. B. Saunders Company, Philadelphia, Pa., 1960. 340 pages, $4.75.

This small book presents the subject matter of descriptive pathology with a minimum of detail. It is written in outline form with short descriptive paragraphs under each heading. There are no illustrations or references to literature. In connection with each organ there is a short enumeration of normal structure. Although the importance of processes of disease is stressed in the first chapter, references elsewhere to functional relationships and to pathogenesis are few and are simplified to primer status, with the result that they often convey vague ideas. For example, there are statements without elaboration that "white patches" on mucous membranes have "debatable malignancy potential," "bronchial carcinoma . . . bears a peculiar, and as yet little understood, relation to the inhalation of tobacco smoke" and "pheochromocytoma . . . produces medullary hormones with accompanying clinical symptoms." There is no mention of certain rather specific morphologic features of disease, such as the presence of tubercles in regional enteritis, the characteristic gastric lesion in pernicious anemia, and the hyaline hepatic cell inclusions of Laennec cirrhosis.

The authors suggest that the book may serve as a "basis for study," and it seems possible that it might be used as a review outline or as a means of suggesting subjects for study, but otherwise the volume will add little to the library of physicians. Presentation of pathology in this way is almost certain to contribute to a misconception that this specialty has little to offer to modern medicine.

ALVIN J. COX, M.D.

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CHILD WITH MONGOLISM, THE (Congenital Acromicria)—Clemens E. Benda, M.D., Director of Research and Psychiatry, Walter E. Fernald State School, Waverly, Massachusetts; Associate Professor, Clark University, Worcester, Massachusetts; Assistant Psychiatrist, Massachusetts General Hospital, Boston; Lecturer in Pediatrics, Tufts University Medical School, Boston; Instructor in Neuropsychiatry, Harvard Medical School, Boston; Diplomate, American Board of Psychiatry and Neurology. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 276 pages, $9.50.

Since the initial description of mongolism by Down in 1866, a tremendous amount of literature has been written on this subject all over the world. Despite this, the peculiar combination of congenital anomalies that make up this syndrome has remained a puzzle to most observers. Modern cytogenetics has added a new aspect to the investigation of mongolism, but still the relationship of the symptomatology to the described chromosomal abnormalities needs a great deal more clarification. For these reasons, Dr. Benda's book is a welcome addition to the literature for people interested in the subject of mongolism.

The book is the most complete and most up-to-date review of this subject this reviewer is acquainted with. Following a historical review, there is a very detailed outline of the anatomical and physiologic changes described in children with this syndrome. In his description, Dr. Benda emphasizes especially the changes in the growth of the organs and the body of such children as they relate to a process of generalized developmental retardation. In the chapter on etiology, the information concerning genetic factors and prenatal maternal influences is carefully reviewed in detail, including a brief review of the data on the chromosomal abnormalities available in the literature at the time the book was written. In other chapters, Dr. Benda draws from his own large experience in this subject to review some of the pathophysiological data which he has supported for a number of years. Here the book loses its impact and its value, as it seems to want to carry a message across which is not always supported by the evidence offered by other authors.

For instance, Dr. Benda's findings that "mongolism is associated with a particular neuropathology which is as typical as the clinical picture itself" is not supported by studies of many other investigators. This reviewer finds it especially difficult to go along with Dr. Benda's interpretation of a basic endocrine dysfunction in mongolism. His theory is that in mongolism there is altered function of the pituitary and of its target glands (thyroid, adrenal, and gonads); pathological studies and biochemical investigations presented in the book, or available in the literature, raise significant questions to this thesis. Occasional minor pathological changes in these glands unsupported by alterations in the common laboratory tests of endocrine physiology cannot be interpreted as evidence of an abnormal status. One is especially on questionable grounds by carrying on such ideas into the field of therapy. The evidence of advantages of elaborate endocrine replacement are at least questionable. Dr. Benda recommends the use of thyroid extracts, pituitary extracts, apparently obtained from calves to be administered orally and vitamin B_{12}. This treatment he claims has a definite influence on the growth rate and probably on the mental performance. The evidence is rather weak and the rationale in the light of present day concepts of endocrine replacement therapy not acceptable (for instance, oral administration of pituitary extracts from animal sources). Other aspects of care of mongoloid children are dealt with adequately and thoroughly; for instance, the chapter on institutionalization versus home care goes along with present day concept of a comprehensive approach that takes into consideration the family and the social setting.

In summary, the book can be recommended to those interested in the subject as a rich source of information, but a very critical mind is necessary in evaluating some of the very controversial aspects of pathophysiology and treatment of these children outlined here.

LUIGI LUZZATTI, M.D.

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CLAIMS MEDICAL MANUAL—Second Revised Edition—Packard Thurber, M.D., Packard Thurber, Jr., M.D., and others. Pacific Books, publishers, Palo Alto, Calif., 1960. 116 pages, $2.50.

In this age when a substantial number of claims for disability are being reviewed by lay people in the employ of the insurance industry, it becomes necessary for these review authorities to have some background of medical knowledge and terminology in order that they may understand what they read on the forms submitted.

The Claims Medical Manual written by Doctor Packard Thurber and his associates fills a very definite need in this category. The book is obviously not designed for use by any physician, though it is an interesting book to review. The authors are to be complimented in making a rather comprehensive and rather difficult subject matter simple in terminology and understandable.

Any physician who is in a position to have to deal with the education of any of the claims personnel of the insurance industry would do well to review this book, recognize its value and use it as a method of training.

Actually the book could be of some value in training ancillary personnel in a doctor's office in his therapy unit and in some selected categories of the hospital help. At least interested physicians should be aware of the existence of the manual and it would not be a mistake for them to review it and keep a copy in their possession, for reference.

FRANCIS J. COX, M.D.

DERMATOLOGY—Diagnosis and Treatment — Second Edition—Marion B. Sulzberger, M.D., F.A.C.P., Professor and Chairman, Department of Dermatology and Syphilology, New York University School of Medicine and New York University Post-Graduate Medical School; Jack Wolf, M.D., Attending Dermatologist to the Grand Central Hospital, New York, N. Y.; and Victor H. Witten, M.D., Associate Clinical Professor of Dermatology and Syphilology, New York University Post-Graduate Medical School. With the Collaboration of Alfred W. Kopf, M.D., Assistant Clinical Professor of Dermatology and Syphilology, New York University Post-Graduate Medical School. Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1961. 615 pages, $14.00.

This is the second edition, enlarged and modernized of a text which first appeared almost 20 years ago under the title of Dermatologic Therapy in General Practice. It previously had been revised five time in its 20-year span. In their preface the authors indicate their intent to provide medical students and physicians in all branches of medicine and surgery a practical, modern and relatively short textbook on the *recognition and management of common skin diseases.*

The text is divided into sixteen chapters and the table of contents outlines their content clearly and in some detail. The first chapter, general dermatologic management, covers 99 of the total 615 pages and is divided into three parts—principles of diagnosis, principles of topical medication and principles of other measures. The latter division discusses ionizing radiation, ultraviolet light, the use of cold, heat, electrolysis, general medical management and environmental factors. In the discussion of treatment both in this and subsequent chapters the authors have stressed the precise forms and manner of use of treatment modalities. Both the formulas of extemporaneous prescriptions and extensive lists of suitable proprietary preparations are given using their trade names. This greatly enhances the usefulness of the book. One may be critical of the increasing use of prepared medicaments but they are obviously here to stay. As in the case of prepared foods versus home cooking, often the proprietary preparation is fully the equal of the individually compounded finished product, sometimes superior to it.

A new chapter (No. 2) is devoted to the use of antibiotics, sulfonamides, corticosteroids and adrenocorticotropin in dermatology. In the rest of the book the various dermatological conditions are divided into related groups under the chapter heading of (No. 3) pruritus, (No. 4) eczematous Dermatoses, (No. 5) atopic dermatitis, (No. 6) urticaria—giant hives, (No. 7) acne vulgaris and other acneform dermatoses, (No. 8) pyodermas, (No. 9) dermatoses due to fungi, (No. 10) common tumors of the skin, (No. 11) bullous and vesicular dermatoses, (No. 12) psoriasis and seborrheic dermatitis, (No. 13) lupus erythematosus, lichen planus and pityriasis rosea, (No. 14) zoonoses (diseases due to animal parasites), (No. 15) drug eruptions, (No. 16) miscellaneous skin disorders.

The discussion of individual diseases is organized to include such features as definition, clinical appearance and pathogenesis, predisposition and susceptibility, localization and incidence, course, differential diagnosis and management. The format is not rigid, however, and, although tables and outlines are used extensively and effectively, discussion is individualized and varied to suit the problem at hand.

No doubt by intent and to keep the book within bounds some of the more unusual variants of the common dermatoses and some of the dermatological rarities are omitted from discussion.

References are few in number and inserted at the bottom of the pages.

The problem of diagnosis is in no way slighted in this book, but one cannot help but be impressed with the effort that has been devoted to aiding the student and practitioner in the *treatment* of skin diseases. From the general management of the patient to the details of topical medication the therapy of each condition is given paramount consideration.

Photographs are excellent and numerous. There are 95 figures most of which show from two to four individual photographs. There are, in addition, 12 color plates comprising 28 individual photographs. The illustrations and color plates are listed according to page at the beginning of the book. There is the usual alphabetical index at the end of the book.

I think this is an excellent text for the students and practitioners for whom it is intended. Dermatologists may also glean ideas and details of treatment found useful by the authors and their associates in the department of dermatology and syphilology of the New York University Post-Graduate Medical School and the Skin and Cancer Unit of University Hospital.

HERMAN V. ALLINGTON, M.D.

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DISC LESIONS AND OTHER INTERVERTEBRAL DERANGEMENTS—Treated by Manipulation, Traction and Other Conservative Methods—E. J. Crisp, M.D. (Cantab.), D.Phys.Med. (Lond.), Consultant Physician Emeritus in Physical Medicine, Guy's Hospital, London. The Williams & Wilkins Company, Baltimore 2, Maryland, exclusive U. S. agents, 1960. 158 pages, $3.75.

This short, concise, easily read book should be of interest to any physician. It is divided into three parts beginning with very simple anatomy and physiology of the spine and ligamentous structures. Reading the first part makes the second part, dealing with various pathologic conditions, readily understandable. The final chapter demonstrates various types of manipulation and traction methods, which many physicians have heretofore felt belonged only to other unorthodox healers.

On the whole, this book written by a medical physiatrist, is completely conservative in its approach to the various problems. It should be remembered that in many cases manipulation and traction is definitely contraindicated, and surgery of one type or another may be the answer.

There is a definite need for this type of therapy and we, as physicians, should use it. Many painful conditions of the entire spine, correctly diagnosed, can be greatly relieved by judicious manipulation.

EDWARD G. EWER, M.D.

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RESUSCITATION OF THE NEWBORN INFANT—Principles and Practice—Edited by Harold Abramson, M.D., Professor of Clinical Pediatrics, New York Medical College, New York, N.Y.: Director of Maternal and Child Health Program, New York Medical College-Metropolitan Medical Center, New York, N.Y.; Visiting Pediatrician, Metropolitan Hospital, New York, N.Y.; and Chief Communicable Disease Service, Metropolitan Hospital, New York, N.Y. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, Mo., 1960. 274 pages, $10.00.

This is an excellent summary of what is known and not known concerning fetal and neonatal circulation and respiration, and the principles and practice of resuscitation. The 24 contributing authors are all members of the Special Committee on Infant Mortality and include Dr. Virginia Apgar, Dr. L. Stanley James, Dr. Duncan Holaday, Dr. Edwin M. Gold, Dr. David Lehr, Dr. Frank Moya, Dr. Lotte Strauss, Dr. Peter Gruenwald and many others. Their joint views have been developed into a readable text by Dr. Abramson. Individual authorship of each of the 17 chapters has not been attempted.

This book should be available to the staff of newborn nurseries and will prove of interest to obstetricians, pediatricians, anesthetists, medical students and all those concerned with the nursery care of infants. It will also interest physiologists working or teaching in the field of respiration. It is well indexed and illustrated and each chapter contains a list of comprehensive references.

WILLIAM DEAMER, M.D.